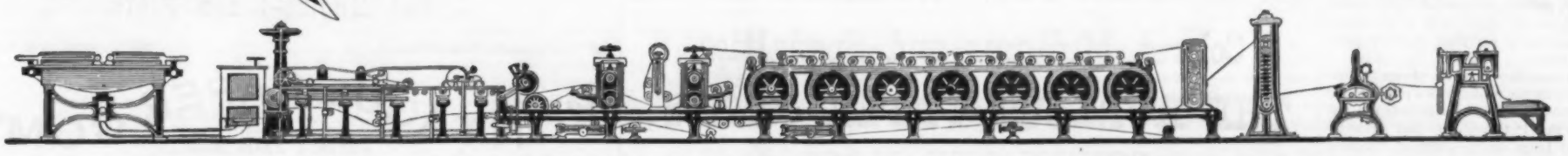
The Paper Trade Journal.



"The Consumption of Paper is the Measure of a People's Culture."

VOLUME X.—NO. 51. NEW YORK, DECEMBER 24, 1881. WHOLE NUMBER 399.

Trade Topics.

Letters Patent for Inventions.

By James A. Whitney, Counselor-at-Law.

VIII.

WHAT CONSTITUTES A PATENTABLE INVENTION—(CONTINUED).

In indicating the sub-divisions of patentable subject matter, it is preferable, on the score of clearness and convenience, to follow the classification developed from the great number of adjudicated cases rather than that less definite indicated by the verbal terms of the statute. This classification must, of course, be more or less arbitrary, including as it must all that which, in an industrial sense, arises from the exercise of the inventive faculty in "the finding out, contriving, devising or creating something new and useful, which did not exist before."

In practice patents on machines are now issued to cover the several combinations of parts included in their structure, and which constitute their essential or distinguishing features. But that a machine *per se* is patentable is settled, not only by the specific terms of the act, but by the leading case of Blanchard *v.* Sprague, decided in 1839, and relating to the celebrated engine for turning irregular forms, patented by Thomas Blanchard, September 6, 1819. The inventor claimed "the method or mode of operation in the abstract," explained in the second article of his specification, which second article described at considerable length the construction and operation of the machine. This form of claim, which would scarcely be admitted at the present day, threw upon the court the duty of interpreting not only its scope but its character. It was held to be for "a particular machine, constituted in the way pointed out, for the accomplishment of a particular end or object." In Woodcock *v.* Parker, an action on the case for a violation of the patent granted to the plaintiff May 8, 1809, for a machine for splitting leather, a "whole machine," or a "new machine," was defined to be a new mode, method or application of mechanism to produce a new effect or an old effect in a new way," which is to be interpreted as a mechanism that, taken as a whole and in connection with its mode of working, is substantially a new creation.

It is clear that a distinction may be drawn between an invention thus exemplified, and a combination of certain specified parts even though the machine itself be composed of old elements newly correlated. The term "machine" may in this sense be taken to mean "organized mechanism," in which an apparatus embracing elements, and perhaps modes of operation, old for other purposes, has those elements so readjusted and their operation so modified as to secure a result unattainable by their former relations with each other.

Thus, in Geizer *v.* Cook, decided in 1842, the subject matter was a peculiarly constructed arm for forge hammers. To quote the words of the court: "It was shown in evidence that previously there had been wooden arms barreled with iron and iron arms barreled with wood." But the subject matter at issue was an arm "composed of wood and iron, each forming a substantial part of the arm, neither being properly an addition to, or covering of, the other, and constituting one whole of which these material were the component parts, and forming an arm more elastic, durable and secure than the former ones." The structure being different from the devices that preceded it, and producing a result not before secured, the court held that the patentee could not well claim it "in a better manner than as a new arm."

The propriety of thus claiming it is apparent when we consider that a claim to the combination of wood and iron in a forge-hammer arm would have included the previous constructions, and would, therefore, have been void; while on the other hand, had the claim been to the mere arrangement of the wood and iron in the structure of the arm, this might have been evaded by some change in which the particular collocation of parts would have been avoided, although still embracing the practical application of the central or essential idea of the actual invention. Whereas, considered as a machine, an entity organized with especial reference to certain results, the scope and character of the invention is made clear.

Another case in point is that of the Clark Patent Steam and Fire Regulator Company *v.* Copeland, on the Timothy Clark patent of 1847, for "improved safety apparatus for steam boilers." The object of the invention was to automatically operate the damper of the furnace by the pressure of steam in the boiler in order that the production of steam should not be above or below that necessary for the required pressure, and that the latter should remain practically constant. The invention consisted in the application of an elastic vessel, to which steam from the boiler was admitted, and which was capable of expanding from the increase of steam pressure or contracting with its diminution. This vessel was externally connected with the damper, so that its swelling or shrinking gave the requisite movement to the damper to increase or diminish the draft of the furnace as required, to increase or diminish the rapidity of the generation of steam in the boiler. Substantially, there had previously existed for the same purpose, but in different combinations, the float regulator, operating on the same plan as the piston regulator, in which a piston, receiving its motion from variations in the steam pressure, had similarly operated the dampers, and being in itself the same as Brunton's operative thermometer, in which an elastic vessel, expanded and contracted by the expansion and contraction of a liquid within it, was designed to give motion to parts in very much the same manner in which those connected with Clark's device were operated. The court held that there was no doubt "that the elastic vessel in Brunton's machine was substantially like that in Clark's," a fact also conceded by the plaintiffs.

But it was also held by the learned judge that a valid objection to the patentability of a machine could not arise merely from its anticipation by some thing "substantially the same in its particular parts," but only that to void the patent, it must be so organized as that, when set in operation, it will produce substantially the same results in the same way. The jury found a verdict for the plaintiff, thus sustaining the validity of the claim.

Dandy-Roll.

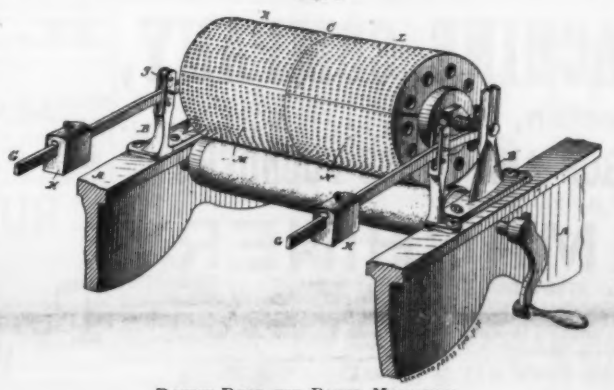
The drawings illustrate an improvement in dandy rolls for paper-machines, the object of the invention being to do away with separate rolls for each mark or design required, and thus greatly lessen the expense, and to so balance the roll as that it shall bear very lightly upon the paper. This roll is made up of separate sections or interchangeable forms, with its journals resting upon the short ends of levers with adjustable weights. Figure 1 is a plan view of the parts of the roll locked together ready for use. Fig. 2 is a view of the compound or composite roll with two of its sections removed. A is part of the frame-work or machine upon which the dandy-roll is mounted. B is one of the two slotted standards in which the journal of the roller-shaft turns. C denotes the entire roll, made up of its several sections. D and F are the end disks forming the frame upon which the roll-sections are mounted, and adjust laterally to admit longer or shorter roll-sections. E is a central movable disk, provided with small pins *a*, that enter corresponding holes in the ends of the roller forms or sections. G G represent two levers that support the journal *f* of the roll.

The levers are fulcrumed in the posts B, furnished with a series of holes, *g*, for pinning the levers. H H are the weights, adjustable along the levers. K L M N are the four sections that go to make up the roll. P is a flanged cap, that is turned forward upon the screw-ended journal after the sections are in place to hold them firmly. Interchangeable and removable forms are used upon a single journal and its disks, or "spiders." These forms, being sections of a hollow cylinder, readily pack away in a comparatively small space.

Each one of the forms may contain all the letters or designs needed, and be used with others that have no letters. The form is made of thin perforated metal, with end pieces of thicker material. The two forms H and M may be placed first in position, the pins *a* passing into holes in their ends. After these two are in position the sustaining disk E is pushed along its journaled shaft until its pins enter holes in the inner ends of the forms. The forms L and N are then secured to the pins on the outer side of disk E. After these two are in position the flange cap P is screwed up until it catches over the correspondingly flanged ends of the forms, as seen at *t*, Fig. 2. It will be readily seen as the holding disks E and D adjust on the journal-shaft that forms of different lengths may be used, and that these forms may make cylinders of varying diameters, the different sizes resting readily upon the same disk-pins. Pins are shown in the disks entering holes in the form ends; but it is, of course, evident that the pins may be in the forms and the holes in the disks. It is evident also that projections or tenons extending laterally from the ends of one set of forms may enter corresponding holes or recesses in the ends of a second set.

The designs or letters are small wire, soldered upon the perforated metal surface of the forms in the usual way. As there is nothing new in this, the letters have not been shown in the drawings. A large number of these cheaply made forms can be kept on hand, and only one journal-shaft with disks is needed. In the old form of dandy-roll, if any accident occurred the cloth had to be taken off to remedy it; but in this form of roll, upon unscrewing the single cap P at one end the forms are easily loosened and removed. In order that the roll may rest lightly upon the paper, its journal-ends rest on levers and adjust the exact pressure wanted by means of weights adjustable on the longer ends of the levers.

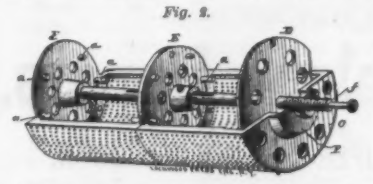
Fig. 1.



Dandy Roll for Paper Machines.

It is quite evident that exactly the same result may be accomplished by attaching weights and cords to the journals or by resting the journals on springs that may readily be adjusted for various weights, the only requisite being that the roll shall be counterbalanced so as to bear lightly upon the paper. Is is especially necessary in a dandy-roll that it shall not bear heavily upon the paper. With the balancing-levers, or their equivalents in weights or springs, a roll of fifty pounds may be made to run over the paper as lightly as the ordinary small dandy-roll formerly used. A balancing device of some sort—and it may be of any well known to mechanism—is a very important addition to a compound roll, which is, from the nature of things, somewhat heavy. Springs are used to vary and add to the weights of rolls in various mechanical devices; but no dandy-roll has ever been balanced to reduce its pressure. Various devices have lately been invented to replace the old dandy-roll, such devices consisting of reversible letters placed upon forms that rock or partially rotate upon the paper; but it is found in practice that a continually-rotating cylinder is preferable.

Fig. 2.



The claims are as follows: 1. A dandy-roll made up of removable and interchangeable sections, upon which distinct devices may be made, the several sections when united forming of themselves a complete and perfect cylinder-surface. 2. In a water-marking roll composed of various sections or parts of cylinders, the combination of the central shaft or journal and the movable retaining-disks adjustable for varying lengths of forms. 3. The combination, with a water-marking roll made up of removable sections, of the slotted standards B, the lever G, for sustaining the ends of the journal and the adjustable weight H. 4. In a water-marking roll composed of removable sections, the combination of the flange *t* and the flanged cap P, screwing upon the journal to secure the forms. 5. In combination with a dandy-roll for water-marking, made substantially as described, levers and weights for counterbalancing it. (249,992.)

New Patents.

DESIGNS.

No. 12,571. Wall Paper.—Edward Leissner, New York, N. Y., assignor to Leissner & Louis, same place. Term of patent, three and a half years.

Sand Filtration at Berlin.

By Professor Wm. Ripley Nichols.

Up to the present time there has been very little done in this country in the way of systematic filtration of water supplies, partly, perhaps, from indifference and lack of information, but mainly on account of the expense. The numerous complaints which arise in the case of almost every city and town supplied with surface water render the question of filtration an important one for the immediate future, and any engineer who has to do with the planning of water-works is liable to be called upon to estimate the cost of filtration and to state how far it may be expected to overcome anticipated or existing evils. For this reason, details of the practice in well-managed works, where the conditions are similar to those which obtain with us, are of peculiar interest. Such details are given in a pamphlet recently published by the superintendent engineer (Betriebs-Ingenieur) of the Berlin filtration works.* The pamphlet also contains the results of observations on "natural filtration" in the neighborhood and elsewhere.

A very considerable portion of the city of Berlin is still supplied with water from the dirty and sluggish Spree after it has been subjected to a very thorough filtration. The water is taken from the river directly on to the filter beds, and although the sluggishness of the flow would allow the deposition of much suspended matter, the very considerable water traffic between Berlin and Köpenik, past the water-works, keeps the water in a rolly condition. Furthermore, the Spree receives, above the point from which the supply is taken, the waste-water of a number of factories, among which are dye and print works; it also receives the effluent of a sewage farm mixed, in some cases, with sewage itself. Besides being thus contaminated, the water, especially in time of flood, possesses a deep brownish-yellow color, and, at times, a peculiar pondy taste due to vegetable extractive matter. Moreover, from spring until fall, a more or less copious growth of *algæ* adds to the disagreeable character of the water.†

The filtration works now supply daily about 40,000 cubic metres (in round numbers 10½ million U. S. gallons) of filtered water—in summer often a larger quantity. There are eleven filter-beds—three covered and eight uncovered—having a total area of 37,000 square metres (about 400,000 square feet). The beds are constructed on the English model, fine sand at the top and coarser material below.‡ * * * With the large area at disposal, it is possible to carry on the filtration at a very slow rate. The water is used, of course, in varying quantities from hour to hour, and, on account of the small size of the clear-water reservoir, a constant rate of filtration is impossible; the maximum rate is, however, not over 0.1 metre downward per hour. For the greater part of the time 1 square metre of sand surface is not required to furnish much more than 1 cubic metre of water in twenty-four hours. This would be at the rate of only 24½ U. S. gallons per square foot, and very much less than is the practice elsewhere.§ The filtration takes place under a very slight head, seldom of more than 0.5 metre (say 20 inches), but even with this low pressure and slow delivery it has been found impossible, with clean sand alone, to filter the water satisfactorily. If the unfiltered water be allowed to stand a fortnight or so, although the larger of the suspended particles will have settled to the bottom, the water still retains a milky appearance, and sand alone cannot remove the exceedingly fine particles to which this appearance is due. On this account the water from a freshly cleaned filter is not used at once, but is allowed to stand on the bed and then passed through very slowly until a thin coating has formed on the surface of the sand. This coating is essential to the removal of the finest particles from the water subsequently filtered. Of course, as the coating becomes thicker the filtration becomes more difficult until it partially stops and the filter is "dead."

As has been hinted above, the great trouble in summer is from the abundance of small *algæ* which soon clog the filter. When the *algæ* are absent a square metre of surface usually filters twenty cubic metres before cleaning is necessary, but in summer the capacity is not over 10 cubic metres to the same area. Sometimes the meteorological conditions are such, especially late in the season, that the *algæ* enter into decay and form a peculiar slimy and almost impervious coating over the surface of the sand, so that it becomes impossible, under the pressure commonly employed, to pass more than 2 cubic metres of water through 1 square metre of sand surface. This decomposition of the *algæ*, as described by Piefke, has often been noticed in the ponds and reservoirs of the Eastern and Middle States, and the very particular observations which Piefke gives on this point are well worth the attention of any who are called upon to consider the question of filtration in this country. We may note the fact, that under the conditions just referred to, the superiority of the covered beds became very evident. As has been observed in this country, the decay of *algæ* increased very much the amount of ammonia (of "albuminoid ammonia") and of nitrites and nitrates. A rather curious observation was made in the decomposition of the *algæ* on the open filter-beds. The gaseous products of decay collected in bubbles until these were sufficiently large to break through the slimy coating and rise to the surface. In the hot days of August this evolution of gas was very considerable, and, as a result of this piercing of the coating, a "dead" filter was sometimes brought again into activity; when such a filter was cleaned the little cavities in the sand thus produced were clearly defined, filled, of course, with accumulated dirt.

The *algæ* are not to be regarded as an unmitigated evil. Besides making the removal of the finer portion of the sediment possible,* in their growth they are purifying agents; they change at least a part of the dissolved organic matter into insoluble substances which settle to the bottom and can be removed by filtration. It is, however, desirable that the water should not remain in contact with them after they have begun to decay.

If, after filtration, the apparently perfectly clear Spree water is allowed to stand for eight or ten days, green *algæ* develop themselves, which is probably due to the fact that the spores of the plants are not retained by the filters. This fact, however, is of no practical consequence in the case of the Spree water, for the water is consumed long before the spores have had time to develop. This is not the case with all waters, as has been found by experience in the works which supply another portion of Berlin. The "ground water" of the Tegel supply contains an *alga*, the *crenothrix polyspora*, of such rapid development that filtration would not be of much use, as the unremoved spores would develop in the service pipes before the water was consumed.

As has been mentioned, the Spree water often possesses to a marked degree the brownish-yellow color common to streams which flow through marshy or peaty regions and to the water of most impounding reservoirs. This color, with the taste which at times accompanies it, gives rise to general complaint,† but even very slow filtration fails to remove it to any considerable extent. Filters of finely prepared cellulose remove a large proportion of the color, but are hardly practicable on the large scale. If sand filters have a slight action in this direction, it is to be ascribed rather to the sediment containing vegetable fibre than to the sand itself.

A few practical details of management may be of interest. In the Berlin beds the thickness of the sand is 600 millimetres (about 2 feet). At each cleaning the sand is removed for a depth of about 10 millimetres, but fresh sand is not returned to the bed until only about 200 millimetres of the original thickness remain. The foul sand is allowed to stand exposed to the air until, by decay, the organic matter has lost its slimy character; it is then washed and eventually replaced upon the beds. When the filters are emptied, the water is drawn completely off, and by successive and systematic stirring nearly the entire thickness of the sand is exposed to the air in order that the small amount of organic matter which was not retained at the surface may be oxidized and destroyed. With the same object in view, the air is allowed to circulate freely, for several days if possible, through the coarser underlying material. The filters are filled from below with filtered water, and then the water is

* Mittheilungen über natürliche und künstliche Sandfiltration. Nach Betriebsresultaten der Berliner Wasserwerke vor dem Stralauer Thor, bearbeitet von C. Piefke, Betriebs-Ingenieur. 8vo, pp. 75. Berlin, 1881.

† These *algæ* I have found, by personal observation, to be identical with those which occur in our own ponds, and which have given much trouble in some of our water supplies, as, for instance, at Springfield and Boston, Mass., and at Albany and New York.

‡ See Kirkwood, Filtration of River Water. New York: Van Nostrand, 1869. Nichols, Filtration of Potable Water. New York: Van Nostrand, 1879.

§ The maximum rate given by Piefke as 0.1 metre downward per hour would be at the rate of nearly 60 U. S. gallons per square foot of surface in 24 hours.

* The difficulty which experiments have shown to exist in obtaining by sand filtration a clear and bright water from some of our Western and Southern streams, which are charged with clay, is probably greater than it would be in the presence of suspended vegetable matter, which in itself would be considered an objection.

† This, too, is an American experience.

passed through slowly, and is allowed to waste for several days.

Artificial filtration is, on the whole, not a difficult operation, but it is one in which the details must be conscientiously and intelligently attended to, and there is no room for negligence or false economy. That the beds must be often cleaned, that from time to time a few thousand cubic metres of filtered water must be used in refilling the beds: these are matters of no consequence if it is thereby possible to reach the main object in view, namely, the furnishing of a good water. The place for economy is in the choice of the cheapest way of carrying on the various details of the works.

Piefke also describes experiments on the use of iron as a purifying medium as a preliminary to sand filtration, but the experiments did not awaken hopes that iron could be used advantageously on the large scale.—*Journal Franklin Institute.*

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British Notes.

[FROM OUR REGULAR CORRESPONDENT.]

5 Ludgate Circus Buildings, London, E. C., Dec. 3, 1881.

Paper makers keep busy and seem to have plenty of orders on hand. In fact, some mills I know of are full of orders up to end of February and March next. It is a rather strange thing, though, that in spite of this, raw materials keep remarkably cheap. There is a certain amount of firmness in all our markets, especially bagging, but yet there is no rise corresponding to the increased activity at the mills.

The future of esparto, too, is exciting some interest. In one of our public journals there is a writer airing out his opinions that one of the objects of the Tunis war was to form an esparto ring and so secure a monopoly of that article. This, I think, is scarcely worth consideration, as the market for esparto is only confined, and a ring would have very little room to work. Two years ago I ventured to express an opinion that esparto was nearly played out, and it is being gradually confirmed. The greediness and anxiety to over-crop have ruined the trade, and it is now a matter of some difficulty to buy a cargo of grass, which is irreproachable.

Paper makers here, through slack times, have not been using more material than they could help, and what with this and current contracts accumulating, large stocks of rags, &c., have existed at the mills. Consequently, paper makers are not buying much, although trade is far brisker. It will take some time to use up old stocks.

While upon the topic of stock, let me advise your dealers to keep a smart lookout for packings of bagging. From what I heard in Manchester a few weeks ago, a little water is a good thing still with some people. If bagging is quite dry, it feels rough and ragged; but if it contains 5 or 10 per cent. of moisture, the bagging will feel cold. It may not feel wet, but it will feel cold and quite different from quite dry stuff. Of course, your dealers are "up to snuff," and will know this, but there may be one innocent young man who is buying 10 per cent. wet bagging and thinking it cheap at 10s. per ton less than *bona fide* stuff.

There are some disagreeable rumors in the air here concerning John Pfeffer. There is no doubt that a criminal sentence has been adjudged to him by the Belgian authorities, and I am afraid and very sorry that I shall hear worse things yet. I believe that the final settlement of affairs has been arranged, and that the bankers will take whatever they can get, the rest of the creditors will get nothing. But what has become of "*les braves gens* ?"

Mrs. Hook, the mother of the late Charles Townsend Hook, died on the 20th ult. The deceased lady was much beloved in Snodland, where her benevolence and kindly presence will be severely missed.

I see by your issue, No. 46, just to hand, that "A Subscriber" points out an error of mine about Eynsford Mill. I admit it ; but my remarks about the Hollingbourne Company's contract with our S. O. are substantially correct, and if "A Subscriber" dares to give his name in The Journal—a very improbable thing—I will prove that he knows as much about the Hollingbourne Company as he does about the contract. Meanwhile, I send you an inclosure, which will convince you that I am not only right, but that "A Subscriber" is wrong in some of his strictures.

The markets for paper stock are steady and firm, but unchanged. In German stock prices are about as follows : S. P. F. F. F., 26s. 6d.; S. P. F. F., 21s. 3d.; S. P. F., 18s.; F. F., 16s. 6d. Blues (1), 17s. 5d.; do. (3), 14s. 6d. Grays, 15s. 6d.

French cottons, best white, 20s. 6d.; No. 2, 17s.; No. 3, 14s. 6d.; blues, 16s. 6d.; superfine whites, 23s.

Russian S. P. F. F., 21s.; S. P. F., 19s.; Dutch linens and cottons mixed, No. 1, 21s. 6d.; No. 2, 16s.; No. 3, 12s. 9d.; baggings, 7s. 9d.

London fine, 22s.; outshots, 15s. 6d.; seconds, 11s. 6d.; thirds, 6s.; bagging, 8s.; common do., 6s.

Esparto, best Spanish, £9; Oran, £7 5s.; Tripoli, £6 to £6 10s.

Chemicals are easier and lower again. During the week white caustic soda, 60 per cent. and 70 per cent., has been sold at a reduction of 1s. 3d. per ton upon market quotations. Cream caustic is again easier, and prices are only nominal. Bleaching powder has perhaps received the best share of attention, and quotations remain unchanged for spot delivery. Makers are still, however, inclined to sell forward at a reasonable premium. Soda ash continues in fair request, but without the least indication of an improvement in value. Prices are as follows : Alum, lump, per ton, £5 17s. 6d. to £6 2s. 6d.; alum, ground, £6 10s.; aluminous cake, £3 2s. 6d. to £3 7s. 6d.; alumina, sulphate of £4 15s. to £5 15s.; antichlor, £8 to £8 10s.; bleaching powder, 35 per cent., £4 2s. 6d. to £4 5s.; caustic soda, white, 70 per cent., £10 5s. to £10 12s.; do. do., white, 60 per cent., £9 2s. 6d. to £9 5s.; do. do., cream, 60 per cent., £8 15s. to £8 17s. 7d.; do. do., bottoms, £8; refined alkali, 58 per cent., £7 10s. to £8; soda ash, 48 to 52 per cent., 1⅝d. per degree; do. crystals (gross), £3 7s. 6d.

W. F. C.

The Western Paper Makers.

[FROM OUR REGULAR CORRESPONDENT.]

Western Office Lockwood Press, 8 Lakeside Building, Chicago, Ill., Dec. 15, 1881.

A meeting of Western paper manufacturers, looking to important results, took place in this city yesterday. For a long time it has been apparent that the lack of understanding and intelligent co-operation between the manufacturers of Cincinnati and the Miami Valley and those of Chicago and the Northwest, rendered ineffectual any regulations passed by either set of manufacturers. If prices were fixed in Chicago, there was nothing to prevent them being lower in Cincinnati, and *vice versa*. This want of unanimity the meeting was intended to modify. The only important action taken in the convention was organization and appointment of officers, and the fixing of a date for the regulation of affairs. The following is a succinct report of the meeting.

Yesterday morning a large number of the members of the Chicago division and the Cincinnati division of the American Paper-makers' Association assembled in the ladies' parlor at the Grand Pacific Hotel; the primary object of the meeting being the consolidation of the two bodies. Over 75 per cent. of all the paper manufacturers in the two districts named were represented either by person or proxy.

J. W. French, of Three Rivers, Mich., was chosen chairman.

After a long session, lasting most of the day, and considerable discussion as to the details of the new organization, the two bodies united under the name of the Western Division of the American Paper-makers' Association.

The new organization, whose objects will be essentially the same as that of the two old ones, namely, the promotion of the interests of the paper trade, and the better acquaintance of its members, then proceeded to the election of officers for the ensuing year, with the following result :

President—J. W. French, Three Rivers, Mich.

First Vice-president—W. B. Oglesby, Middletown, Ohio.

Second Vice-president—P. F. La Motte, Louisville, Ky.

Treasurer—H. J. Rogers, Appleby, Wis.

Secretary—Lucius Clark, South Bend, Ind.

Executive Committee—J. W. French, Three Rivers, Mich.; H. D. Clutch, Franklin, Ohio; J. L. Rubel, Louisville, Ky.; J. A. Kimberly, Neenah, Wis.; and Wm. N. Van Nortwick, Batavia, Ill.

After the transaction of some minor business the society adjourned, to meet at Cincinnati on January 18.

In a brief conversation with Mr. French this morning, I learned that his corporation, the J. W. French Manufacturing Company, Rozet Mills, Three Rivers, Mich., is preparing to start its new 76-inch Fourdrinier as soon as possible. This will give the mills a capacity of about seven tons daily.

The same company has just purchased the flouring mill adjoining the paper mill, property in order to secure the water-power. The building will probably be utilized as a paper mill. The town of Three Rivers is soon to be blessed with "brand new" water-works, which will be a great convenience to the manufacturing interests of the place. Mr. French was too modest to say so himself, but I am told by some of his fellow-townsmen that the water-works are an institution due principally to his efforts, as President of the town corporation.

Messrs. Clark and Kimberly, whose names appear prominently in the report of the convention proceedings, have just left Chicago for the Atlanta Exposition. Both gentlemen are veterans of the late war, and will spend a portion of their time in revisiting their old battle-grounds. They will return about the 26th.

Trade is quiet and business steady.

G. B. H.

Holyoke Notes.

[FROM OUR REGULAR CORRESPONDENT.]

Holyoke, Mass., December 22, 1881.

The numerous drummers from the stock houses report dull days as the year draws to a close, but every one else in Holyoke is as happy as lively business can make them. The manufacturers are hurrying to finish their most pressing orders, and putting their stock and other property into the best possible shape for the January inventory, while the merchants are busy with a good holiday trade. Some of the latter, not knowing anything else to complain of, are scolding about the small-pox, and saying that it is keeping the country people out of the city. They say they are either going to Springfield to do their holiday shopping or are not doing as much as usual. It is impossible to tell how much the small-pox is doing to keep people away, but probably not much. We think it has nearly died out. There continue to be two or three new cases a week, but they are all confined to the filthiest, most crowded districts of the city, and apparently to those houses where the earlier cases occurred. The disease is not feared by the part of the population which takes a pride in cleanliness and right living. The city is doing what it can to mitigate the evil, and the accommodations at the new pest-house and the care given to patients there, are all probably much better than the sick ones could get at home. Nevertheless, the poorest of the people dread the pest-house, and they often hide those taken with the disease, and thus give the public health authorities much trouble. The Irish do not have much fear of small-pox, taught by their experience at home, where it is not often fatal, and is not dreaded any more than the measles. Very many have the disease before coming to this country, but those who have never had it seem to be more susceptible to it than the American or French working people. There is still no evidence that the first case, or any subsequent one, came from paper rags. It was two weeks after the first girl was taken before any more came down, and it could hardly be possible that a lot of infected rags could go through a room where one hundred hands are employed and only one person take the disease. This is all the result that can be obtained, after some investigation as to the causes of the outbreak. Probably the authorities of other cities and towns where the disease has appeared can tell.

Some laughable incidents have occurred during the vaccination period. One of the rag-room women at a large paper mill had been vaccinated a week or ten days before the doctor was sent around to her mill, and the poison was doing its work most effectually, giving her a very sore arm; but, hearing that the company was now going to pay for the job, she went in and had the other arm operated on, and now she is almost disabled from work with the kine-pox in both arms.

A Scotch machine tender in this city named Andrew McKay has recently patented a new device for dandy-rolls for the purpose of washing off the foam which collects on them, without stopping the machine. A perforated water-pipe passes over the top of the roll, and inside of it a pan is suspended which catches the water and whatever the water brings with it. Thus the water mark is kept free from foam, and a good deal of paper is kept from damage. The improvement will be adopted by the dandy-roll manufacturers of this city and put to immediate use.

J. B. Williams, foreman of the rag room of Whiting Mill No. 2, is so popular with his help that they have given him his Christmas present several days in advance. He was called out of his office the other afternoon, and after a neat little speech by one of the women, was presented with a gold watch and chain, a beautiful and costly present.

Philo Cline, who seems to have been president, treasurer, directors and all of the Massachusetts Paper Company, has filed schedules of his affairs in the Insolvency Court of this State, and the creditors will hold their first meeting on January 4. He estimates his assets as follows: Rags, $5,200; fixtures, $500; accounts due out of Massachusetts, $7,859; in Massachusetts, $4,349; paper, $17,494; notes, $3,350; total, $21,348, besides the rags held under mortgage by the City National Bank. The amount of liabilities is $209,398, the Holyoke creditors being as follows: Valley Paper Company, $42; Wauregan Paper Company, $3,094; Nonotuck Paper Company, $604; Crocker Manufacturing Company, $488; Massasoit Paper Company, $7,514. The amount due E. C. Rogers is not given in the list. Other creditors are: Adams Paper Company, $6,089; Southworth Paper Company, $3,834; E. J. Cary, of North Adams, $8,389; City National Bank of Springfield, $10,000; John Olmsted, of Springfield, $2,577.

H.

Obituary.

W. H. H. Laley.

W. H. H. Laley, holding a prominent position with J. B. Lippincott & Co., of Philadelphia, publishers, stationers and booksellers, died at his home in that city of typhoid fever, on Tuesday night of last week, aged about thirty-two years. Although quite a young man, he held the responsible position of superintendent of the stationery department in the house with which he was connected, and as such made all of the purchases of that class of goods for the firm, which brought him into business relations with most of the prominent houses in the stationery trade. The members of the firm and all who knew him speak very highly of him as a man of the most untiring energy, and possessed of many admirable traits of character. His death was quite unexpected, he having been confined to his house for only a few days. All of the members of the firm in whose employ he was attended his funeral, as well as a number of members of the trade, several going on from this city.

Emma L. Outterson, widow of John S. Outterson, and sister-in-law of W. P., A. and F. E. Outterson, all well known paper makers, died at Pulaski, N. Y., on December 18. Mrs. Outterson was a Christian woman and an earnest worker in the cause of religion and morality, and her death is deeply regretted.

Charles Webster, of the firm of Charles Webster & Co., booksellers, &c., Milwaukee, Wis., is dead.

Oscar Monnig, bookseller and stationer, Jefferson City, Mo., is dead.

Personals.

Samuel P. Train, of Boston, was among the guests at the Vanderbilt wedding reception given this week at the residence of the bride's father, William H. Vanderbilt.

General Notes.

At the meeting of the trustees of the Stationers' Board of Trade held this week, it was decided to give the annual dinner, but the time and place has not yet been determined upon. George W. Davids is on the committee having the matter in charge.

"Vick's Illustrated Floral Guide" for 1882 is an elegant book of 130 pages, two colored plates of flowers, and more than 1,000 illustrations of the choicest flowers, plants and vegetables, and directions for growing. It is handsome enough for the centre-table or a holiday present. It will be sent to any address for ten cents. It is printed in both English and German.

WANTED—A SITUATION AS FOREMAN OR Manager in a straw or rag, news or book mill. Have had a thorough practical experience in the manufacture of the various grades of paper, from straw wrapping to book paper, and was fifteen years manufacturer of the Manchester Paper, long sold by the late John Priestley, and from 1873 to 1877 sold by Messrs Jessup & Moore. Address T. C. BRADBURY, Ashley Falls, Mass.

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MANUFACTURER OF
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BY THE OUTTERSON-TAYLOR PROCESS.
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Those who have unsafe Rotary Boilers in use can exchange them for the Loring Patent Rotary, and can be furnished with abundant evidence that the Loring Boiler is absolutely safe, and the only safe Rotary Bleaching Boiler in use. For the production of chemically prepared wood-pulp it has been found extremely difficult to make a boiler that would remain absolutely tight for any considerable length of time. I have accomplished this result by adopting modes of construction far in advance of the best methods for producing first class boiler work, in combination with substances and methods entirely independent of boiler work, and only known to myself. I invite special inquiries in regard to my patent Wood-pulp Boilers, patent Straw-Pulp Boilers, and Rotary Bleaching Boilers; also to my patent process for extracting water from wood and straw pulp, and to my improved Fibre or Drainer Tanks, and Fibre Valves. The common steam boilers built by the undersigned have proved more durable and safer than those of any other manufacturer in the United States. Steam boilers, now in good condition, that have been in constant use twenty-eight years, can still be seen in use in Boston. Not one of the many thousand boilers, varying in weight from one-half to forty tons, has ever exploded or given out, to cause injury to a single person or to one dollar's worth of property, during the twenty-eight years.

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NOTICE.—I have been informed that irresponsible boiler-makers have offered to build Rotary Boilers with whole wrought-iron heads and a hollow journal, which would be an infringement of my patent. Such boilers will be made by the undersigned at low prices—having special tools for the work—and no extra charge made for the patent right, which would have to be paid by the user if made by an unauthorized person.

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Established 1861.
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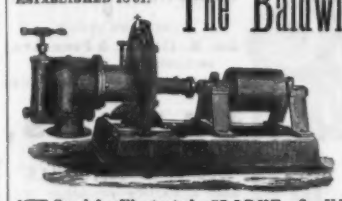

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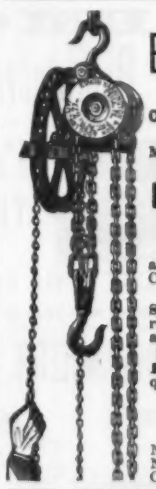

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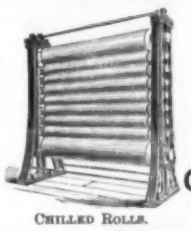

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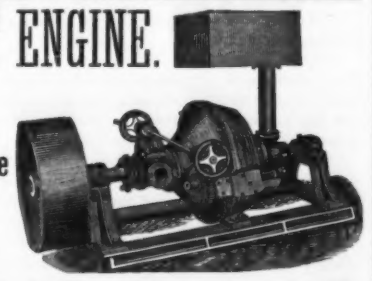

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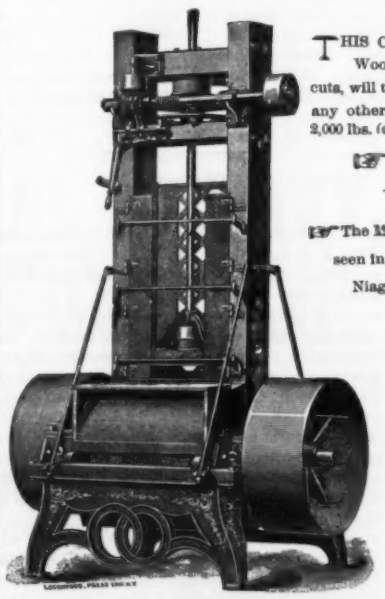

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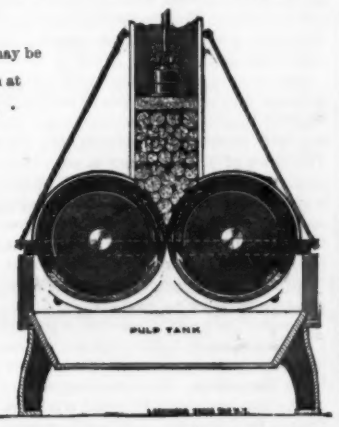

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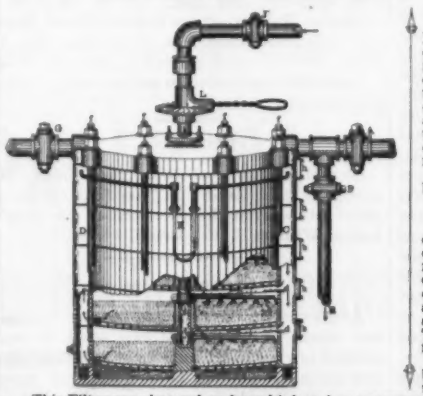

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The operation of washing or cleansing the filter beds is effected by means of

TRAVELING JETS OF WATER.

All other filters, of whatever construction, are cleansed either by reversing the current of water or by removing the filtering material. The first-mentioned process only partially accomplishes the object, and the other involves so great an amount of labor and expense (besides its impracticability), as to preclude its general adoption. The frequency and facility with which the "MULTIFOLD" FILTER can be cleansed, insures at all times a perfect filtration.

The pipe shaft and radial arms are made of brass, and the iron compartments are bituminized, to prevent corrosion.

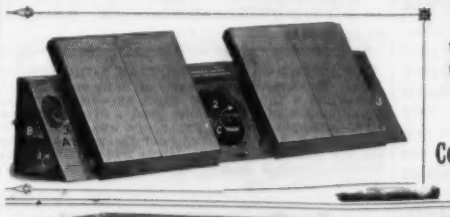
This Filter may be used under a high or low pressure of water. The sizes we are at present prepared to furnish are: 20, 40, 50 and 96 inches diameter, and from three to ten sections high.

☞ For Descriptive Circular, address

THE NEWARK FILTERING COMPANY,

Represented by F. V. M. HUDSON, 81 Reade St., N. Y. 177 Commerce Street, Newark, N. J.

JONES' PATENT FIRE-JAMB PLATES AND BOILER SETTING.



Furnish permanent and perfect protection to the boiler front, and supply heated air at the bridge wall to aid in combustion of gases.

Ask your Boiler Maker for it.

Manufactured by

Cohoes Iron Foundry and Machine Co.,

COHOES, N. Y.

CLOSED.

OPEN.

THE BEST FLAT TOP DESK IN THE WORLD!

None of the various appliances we have presented for facilitating Desk labor have met with greater approval than the above. The lower sections are pivoted to the framework of the body of the Desk, which, with a touch of the hand, rotate at the will of the operator. Awkward draws and doors are thus done away with, and proper facilities afforded for the convenient classification of Books, Papers, &c. Twenty-four Pigeon-Holes in left case filled with our Patent Filing Boxes. We apply the same principle to Cylinder and other styles of desks. For particulars and prices send 3-cent stamp to

THE WOOTON DESK MANUFACTURING CO.,

T. G. SELLEW, 111 Fulton St., N. Y., Agent. Indianapolis, Ind.

WATERBURY

AND

EMPIRE FELTS.

Old, Tried, Reliable.

MANUFACTURED BY

H. WATERBURY & SONS,

Oriskany, Oneida Co., N. Y.

☞ Price Lists sent on application.

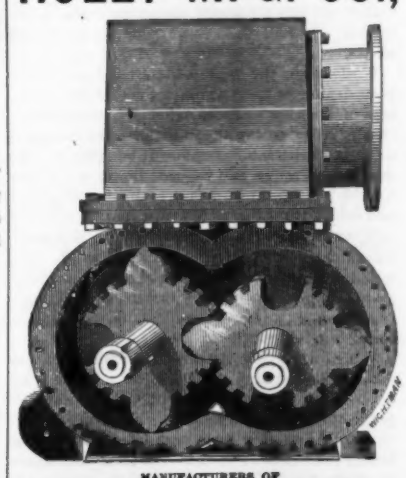
MIDDLEBURG, N. Y., March 21, 1881.

H. Waterbury & Sons, Oriskany, N. Y.:

GENTLEMEN—Your Felts wear remarkably well; your First Press Felts, 29×50, run on the average **six weeks**; we run heavy Straw Wrapping and have made over forty-five tons of paper on one of your 29×50 Felts; your Second Press Felts, 12×70, that weigh 11 to 12 lbs., run on the average twelve weeks, and make over ninety tons of paper during that time. Yours, etc., L. FOX.

Supt. of Middleburg Paper Mills.

HOLLY MFG. CO.,



MANUFACTURERS OF

Holly's Steam, Rotary and Pulp Pumps

LOCKPORT, N. Y.

☞ Send for Catalogue and Price Lists.

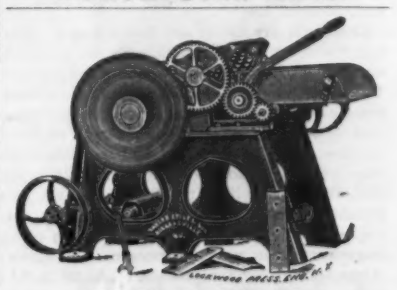
WRIGHT MACHINE CO.'S

WATER WHEEL

Governor.

It is quick and positive in its working, and not liable to get out of order. It has an adjustable speed arrangement by means of which the speed of the wheel may be varied, and a self-acting stop motion which stops the action of the Governor when the gate is entirely raised or closed, so there is no liability of strain, or breaking of gears.

WORCESTER, MASS.



GIANT PAPER STOCK CUTTERS

(THREE SIZES).

They are the most durable, have greater capacity, take less power, and are the cheapest cutters in the market. Estimates and full description furnished on application. Manufacturers of the **Angle Bed Plates,** Roll Bars (steel laid or all steel), Trimming Knives and Paper Mill Knives of every description.

TAYLOR, STILES & CO.,

Riegelsville, Warren Co., N. J.

CLEVELAND WIRE WORKS,

W. S. TYLER, Proprietor,

—MANUFACTURER OF—

FOURDRINIER and CYLINDER WIRES,

Dandy Rolls, Cylinders, &c.

Cylinders and Dandys made, repaired and covered. Designing and Lettering Dandys a Specialty.

CLEVELAND, OHIO.

DIRECTORY.

Cards under this heading will be charged for at rate of $15 per annum for each card.

NEW YORK HOUSES.

Jute Butt Brokers.

CABOT, BOWLES & CO., 81 Water st.

CROCKER, HENRY H., & CO., 134 Pearl st., N. Y.

DALAND, WILLIAM S., 124 Water st., N. Y.

COHEN, PHILIP L., & Co., 105 Water st. Special attention paid to buyers' interests in purchasing and shipping.

TUCKERMAN, G., 72 Beaver st., N. Y.

Note Broker.

COLBY, C. A., Buys and Sells Notes of Paper Manufacturers and Dealers, 22 Nassau st., N. Y.

Paper and Paper Makers' Supplies.

BARRETT, THOMAS 78 Duane st., N. Y.

BELDEN, M. B., Straw, Manilla and Rag Paper, 45 Dey st., N. Y.

BUTLER & JOHNSON, Dealers in Paper, 44 Beekman st., N. Y.

CLARK, C. C., Paper and Mill Supplies, 85 Cliff St., New York.

HEWITT, C. B., & BRO., 48 Beekman st.

HUBBS & LAMB, 36 Beekman st., N. Y.

HULBERT, H. C., & CO., 53 Beekman st.

LYON, N. C., Jr., 46 Ann st., N. Y.

MURPHY, JOHN J., 47 John and 5 Dutch sts.

PERKINS & GOODWIN, 84 Duane st.

SIMPSON & WRIGHT, 201 William st., N. Y.

WATSON, GEORGE, Jr., 63 Beekman st.

Paper Makers.

HAND & ELSWORTH, White and Colored Tissue and Copying Paper, at Peekskill, N. Y. Paper Warehouse and office, 51 Beekman st., N. Y.

ORRS & CO., Printing and Hanging Mills at Troy. Roll Papers a Specialty. Office, 39 Park Row, N.Y.

YOUNG, PETER, Manufacturer of Manilla and Wrapping Paper, also dealer in Rags and Paper Stock. Mill and office, 7 and 9 Elm st., N. Y.

Paper Makers' Chemicals and Colors.

HELLER & MERZ, Ultramarine, 55 Maiden lane, N.Y.

RIKER, J. L. & D. S., 45 Cedar st.

SERGEANT BROS., 78 William st., N. Y.

Paper Stock Brokers.

BARTOW, THEO., & SONS, Jute Butts and China Clay 54 Pine st., N. Y.

BEEBE, IRA L., 44 and 46 Duane st., N. Y.

HAWKINS, W. F., Broker in Rags, Paper Stock, and Chemicals, 62 Duane st., New York

Printed Wrapping Paper.

NUGENT & STEVES. Also Paper Bags and Boxes. 538 and 540 Pearl st., N. Y.

Rags and Paper Stock.

ATTERBURY BROS., 253 and 255 Front st.

BRIGGS, R. B., 12 Reade st.

BUCHANAN, M. T., 203 Front st.

COHN, LAZARUS & CO., 253 Pearl st., N. Y.

CORRIGAN, PATRICK, 700 Second avenue, N. Y.

DALY, DANIEL, 366 Water st., N. Y.

DAMERY, JAMES, 277 Water st., N. Y.

EVANS, T. J., N. W. Corner Frankfort and William sts., N. Y.

FITZGERALD, JAMES M., & CO., Paper and Paper Stock, 187 South Fifth ave., N. Y.

FLYNN BROS., 61 Congress St., S. Brooklyn, N. Y.

GILDEA, PATRICK, 445 and 447 West 13th st.

HARLEY, GEORGE, 362, 365 and 367 Third st., N. Y.

HENNESEY, JAS., 10 and 12 Reade st., N. Y. Warehouse, 253 Fourth st., Brooklyn.

KEENAN'S, OWEN, SON, Established 1840. 448 Pearl st., N. Y.

KENDALL BROS., Morse Building, 140 Nassau st., N.Y.

LIBMANN, JOSEPH, & CO., New Rags a Specialty, 3 Howard st., N. Y.

LOEWENTHAL & MORGANSTERN, 21 Beekman st., N. Y.

LOEWENTHAL BROS., 214 Pearl st., N. Y.

LYON, JAMES M., Agent, 534 Pearl st., N. Y.

LYON, J. W., & CO., 35 Park st.

MAHARIN, M. A., Metals, 513 Washington st.

McGINNIS, HUGH, Dealer in Cotton & Woolen Rags, Paper Stock & Old Metals, 59 & 61 Spring st., N. Y.

McQUADE, ARTHUR J., 535 & 537 E. 13th st., N. Y.

O'MEARA, M., 27 Centre st.

SAVAGE, JAMES, Jr., 386 & 388 Seventh ave., N. Y.

SERGEANT BROS., 78 William st., N. Y.

SHEA, JAMES, Cotton and Woolen Rags, 65 Park st.

SMITH, JAMES F., Jute Waste a Specialty, 36 Peck slip, N. Y.

SMITH, THOMAS, 50 Hester st.

SOULS, WM., & CO., 392 Hudson st., N. Y.

WARD, OWEN, 448 & 450 West 29th st.

WELDON, P. & T., Dealers in Cotton and Woolen Rags, 112 & 114 Navy st., Brooklyn, N. Y.

Straw Boards.

BUTTERFIELD, H. A., 548 Pearl st., near Broadway.

FITZGIBBONS, MESSER & CO., Mfrs. Straw Boards, Manilla Pulp Lined Bds., News& Lining Paper, Liners of Straw Bds. by Patent Mach'y, 63, 65 & 67 Crosby st.

HAYES, JAMES E., & CO., 75 Duane st

Wire Cloth.

LANG, MARIUS, Importer of Wire Cloth, 94 Bleecker st., N. Y.

OUT OF TOWN HOUSES.

Binders' Boards.

SHEEDER, J. FRED., Mfr. of Album, Binders' Trunk and Button Boards, Kimberton, Pa.

BARBER, J. & J. S., Paper Stock and Binders' Boards, 621 and 623 Commerce st., Philadelphia, Pa.

Book Binders' and Paper Box Makers' Materials.

SNIDER & HOOLE, Cincinnati, O., and Chicago, Ill.

Cuts for Printers of Wrapping Paper, Flour Sacks, Etc.

ZEESE, A., & Co., 155 & 157 Dearborn st., Chicago, Ill.

Dandy Roll Manufacturers.

BUCHANAN, BOLT & CO., Holyoke, Mass.

CHENEY BIGELOW WIRE WORKS, Springfield, Mass. Pat. Seamless Wove and Laid Dandy Rolls.

Paper Cutters.

HOWARD IRON WORKS, Buffalo, N. Y.

Paper Makers' Chemicals and Colors.

BLANCHARD, J. HENRY, Chemicals and Wood Pulp, 103 Milk st., Boston, Mass.

MITCHELL, WM. H., 43 N. Front st., Philadelphia.

Paper and Paper Makers' Supplies.

BOYNTON, G. E., Paper and Twine, 37 Eddy st., Providence, R. I.

Paper Manufacturers.

JERSEY CITY PAPER CO., White and Colored Tissue & Manilla Wrapping, 211 Wayne st., Jersey City, N.J.

SCOTT PAPER CO. (Limited), 27 N. 6th st., Philadelphia. Flour Sack, Building and other Manilla Papers.

Paper Making Machinery.

EMORY, P. P., & CO., Mfg. of Water Filter Lock Valve, Springfield, Mass.

HOLYOKE STEAM BOILER WORKS, Manufacturer of Steam Boilers (B. F. MULLIN), Holyoke, Mass.

SMITH, WINCHESTER & CO., South Windham, Ct.

THE SIBLEY MACHINE CO., Norwich, Conn.

Rags, Paper and Paper Stock.

BULKLEY & CO. (Late with J. G. Ditman & Co.), 194 North Sixth Street, Philadelphia.

BUTLER, THOMAS, Cotton and Woolen Rags, Iron and Metals. 249 Causeway st., Boston, Mass.

CHEEVERS, JAS., Paper Stock and Woolen Rags, 205 Causeway St., Boston, Mass.

CLAFLIN, C. J., & CO., Dealers in Cotton Waste, Providence, R. I.

DICKINSON & CO., Cotton & Woolen Rags, New Haven, Conn.

DICKINSON & MAYO, Cotton Rags and Paper Stock, Springfield, Mass.

ELLIOT, A. G., Paper and Paper Stock, 727 Chestnut and 726 Jayne sts., Philadelphia.

B. FELSENTHAL & BROS., Paper, Bags, Twine, Woolen & Cotton Rags, 156-160 S. Desplaines st., Chicago.

FOLLANSBEE, TYLER & CO., 124 and 126 Quincy st., Chicago, Ill. Refer to J. W. Butler Paper Co.

GARVAN, P., Paper & Paper Stock, Hartford, Conn.

GILBERT, WM., & CO., Paper and Woolen Mfrs.' Materials. 11 and 13 Market st., Chicago, Ill.

GRAHAM PAPER CO., Paper Warehouse and Stock Dealers. 217 and 219 No. Main st., St. Louis, Mo.

HARRIS, M., & BROS., 403 & 405 Fifth ave., Chicago, Ill. Branch Houses: Dubuque, Ia.; Burlington, Ia.

HUBLEY & CO., Rags and Paper Stock, Worcester, Mass.

LANEY, JAMES, & CO., Dealer in Paper and Paper Stock, Cotton and Woolen Rags, Rochester, N. Y.

MASSACHUSETTS PAPER CO., Paper and Paper Stock, Springfield, Mass.

McARDLE & HART, 355 West st., N. Y., and Newburg, N. Y.

McKEON, P. & J., Dealers in Woolen & Cotton Rags, &c. 205 and 207 North Second st., Brooklyn, E. D.

PEARL, HENRY W., Paper and Paper Stock, Springfield, Mass.

RICHMOND & CO., F. H., Paper and Paper Stock Warehouse, Cotton Waste Dealers, Providence, R. I.

RING, M. A., & SONS, 363 Atlantic ave. and 20 Purchase st., Boston, and 139 No. Front st., Phila.

SIMMONS, JOHN, Wholesale Dealer in Paper and Rags, 20 and 22 Decatur st., Philadelphia.

SNIDER'S, LOUIS, SONS, Manufacturers and Wholesale Paper Dealers. 121 Walnut st., Cincinnati, O.

UNION WADDING CO., Manufacturers and Dealers in Cotton Waste and Paper Stock, Providence, R. I.

Screen Plate Manufacturers and Repairers.

ANNANDALE SCREEN PLATE CO., Repairing Old Plates a Specialty. P. O. Box 309, Paterson, N. J.

ASHMUN SCREEN PLATE CO., Old Plates renewed charges moderate. P. O. Box 210, Paterson, N. J.

JUDSON, HOWARD, 127 and 129 N. J. R. R. ave., Newark, N. J. New Patent Screen Plates.

Straw Boards.

PINKHAM, T., Agent for Androscoggin Pulp Co.'s White Box Boards and Ashland Leather Board, 24 Friend and 52 Elm streets, Boston, Mass.

Straw Boards and Straw Wrapping.

TUCKER'S, E., SONS, Straw Boards, Paper, Twines, Paper-Box Mach'y, 100 Trumbull st., Hartford, Ct.

Twine.

BOSTON CORDAGE CO., Boston.—Sisal Twines for Paper and Pulp Mfrs. a Specialty. C'spondence Solicited.

FOREIGN HOUSES.

Rags and Paper Stock.

WALKER, J. R., Dealer in Paper Stock, Woolen Rags and Scrap Metals, 30 and 34 Foundling st., Montreal.

IMPORTATIONS OF PAPER STOCK, PAPER, BOOKS, CHEMICALS, &c.

IMPORTS of Paper and Paper Materials, Books, &c., at the Port of New York, for the week ended Dec. 16, 1881. Quantity given in packages when not otherwise specified.

Aniline Colors	125	$15,532
Alum	—	—
Aluminous Cake	—	—
Bleaching Powders	759	7,002
Soda Ash	718	15,520
Soda, Bicarb	211	1,589
Soda, Caustic	539	6,061
Soda, Sal	1	2
Ultramarine	14	1,015
Books	364	45,199
Newspapers	64	3,105
Engravings	99	25,424
Ink	27	1,444
Lead Pencils	1	65
Paper	223	13,742
Steel Pens	5	4,534
Stationery	17	2,640
Slate Pencils	—	—
Clay	—	608
Jute Butts	2,345	62,794
Jute Rejects and Cuttings	—	—
Paper Hangings	5	417
Paper Stock	2,843	25,219
Terra Alba	—	486
Waste	37	3,373
Totals	15,406	$287,274

TOTAL IMPORTS.

General Merchandise, for the week ended December 16, 1881	$6,495,958
Paper, Paper Stock, &c.—	
For the year ended May 23, 1873	15,074,825
For the year ended May 22, 1874	12,150,855
For the year ended May 21, 1875	13,292,891
For the year ended May 26, 1876	11,293,408
For the year ended May 25, 1877	9,627,694
For the year ended May 24, 1878	10,946,413
For the year ended May 23, 1879	9,561,091
For the year ended May 21, 1880	13,549,975
For the year ended May 27, 1881	14,379,508
For quarter ended Aug. 26, 1881	2,844,838
For quarter ended Nov. 25, 1881	3,356,684
For the week ended Dec. 2, 1881	185,800
For the week ended Dec. 9, 1881	154,595

IMPORTS of Rags and other Paper Stock at the Port of New York, since Jan. 1, 1881, from the following Ports, showing Quantities from each Port.

	Rags. Bales.	Old Papers. Bales.	Manillas. Bales.
Algeria	—	—	1,519
Alexandria	4,026	—	—
Antwerp	4,358	946	2,384
Beyrout	404	—	—
Bremen	1,907	488	499
Bristol	—	798	318
Bordeaux	44	—	—
Cadiz	22	—	—
Calcutta	3,299	97	204
Campeachy	4	—	—
Canary Islands	24	—	—
Cardiff	—	—	701
Catania	338	—	—
Copenhagen	614	—	—
Dublin	—	32	—
Dundee	4,112	2,825	10,768
Edinburgh	240	96	210
Genoa	1,485	—	112
Glasgow	8,436	5,731	455
Gothenberg	209	—	—
Hamburg	4,111	896	209
Havre	292	5	—
Hiogo	1,343	24	—
Hull	10,093	611	815
Jamaica	129	—	—
Konigsberg	2,886	—	—
Leghorn	5,271	—	—
Leith	645	692	276
Lisbon	—	431	—
Liverpool	2,761	2,633	2,169
London	22,491	22,436	7,109
Marseilles	805	—	—
Naples	2,606	—	—
Newcastle	140	344	—
Nuevitas	7	—	—
Pillau	6,268	—	—
Rio Janeiro	292	—	51
Rotterdam	240	—	—
Singapore	2	—	—
Stettin	679	—	—
Swansea	—	—	184
West Hartlepool	780	—	—
Yokohama	2,257	—	—

EXPORTS of Paper, Books, &c., from the Port of New York to Foreign Ports for the Week Ended Dec. 14, 1881, with Aggregates and Values.

BOOKS, cases, to New Zealand, 2; to United States of Colombia, 5; to China, 2; to Argentine Republic, 3; to Bremen, 4; to Liverpool, 9; to Australia, 4; to Brazil, 5.

PAPER, to British West Indies, 1,800 rms., 21 cs.; to British Possessions in Africa, 2 cs.; to United States of Colombia, 38 pkgs.; to Hayti, 25 pkgs.; to Venezuela, 2 cs.; to Danish West Indies, 6 cs.; to Bremen, 5 cs.; to Liverpool, 10 cs.; to Australia, 6 pkgs.; to Cuba, 338 pkgs.; to Brazil, 62 pkgs.

STATIONERY, cases, to British West Indies, 5; to United States of Colombia, 27; to Hayti, 4; to China, 1; to Argentine Republic, 9; to Bremen, 7; to Liverpool, 12; to Barcelona, 1; to Cuba, 13; to Brazil, 18.

AGGREGATES AND VALUES.

Paper, reams	1,800	$378
Paper, pkgs	469	6,383
Paper, cases	46	998
Books, cases	36	348
Rosin, bbls	1,089	3,672
Stationery, cases	97	8,582
Totals	3,481	$20,361

TOTAL EXPORTS.

General Merchandise for the week ended December 14, 1881	$4,911,998
Paper, &c., for the year ended May 27, 1873	2,889,482
Paper, &c., for the year ended May 26, 1874	1,783,877
Paper, &c., for the year ended May 25, 1875	2,327,582
Paper, &c., for the year ended May 23, 1875	1,654,384
Paper, &c., for the year ended May 29, 1877	1,790,659
Paper, &c., for the year ended May 28, 1878	1,576,562
Paper, &c., for the year ended May 27, 1879	1,889,783
Paper, &c., for the year ended May 26, 1880	2,016,545
Paper, &c., for the year ended May 25, 1881	1,920,058
Paper, &c., for quarter ended Aug. 24, 1881	573,198
Paper, &c., for quarter ended Nov. 23, 1881	604,757
Paper, &c., for the week ended Nov. 30, 1881	37,491
Paper, &c., for the week ended Dec. 7, 1881	42,218

NEW YORK IMPORTS.

FROM DECEMBER 13 TO DECEMBER 20, 1881.

Paper Stock.

Train, Smith & Co., Andrea Padre, Marseilles, 171 bs. rags.

Lee & Sturges, Lake Maniatoba, Liverpool, 156 bs. rags.

J. C. O'Brien, Pietre de Coninck, Antwerp, 213 bs. rags.

J. W. Lyon & Co., Othello, Hull, 25 bs. old papers.

Lee & Sturges, Canada, London, 273 bs. old papers.

Horwitz & Neustadt, Alsatia, London, 67 bs. rags.

Lee & Sturges, Marengo, Hull, 59 bs. rags.

Lee & Sturges, Egyptian Monarch, London, 99 bs. rags.

Paper.

B. Illfelder, Switzerland, Antwerp, 2 cs.

Henry Bainbrige & Co., France, London, 12 cs.

F. Beck, Arabic, Liverpool, 3 cs. hangings.

Merchants' Dispatch Company, by same, 3 cs. hangings.

H. N. Peak, by same, 56 bales, 2 cs.

B. Illfelder, Wieland, Hamburg, 9 cs. coarse.

Scoville Manufacturing Company, Amerique, Havre, 1 cs.

G. J. Kraft, by same, 2 cs.

G. J. Kraft, Vanadalia, Hamburg, 4 cs.

Jos. Hill, City of Berlin, Liverpool, 23 cs. hangings.

Balar, Sterling & Co., by same, 4 cs. hangings.

C. Moller, Oder, Bremen, 1 cs.

E. & H. T. Anthony & Co., by same, 8 cs.

E. & H. T. Anthony & Co., Belgenland, Antwerp, 3 cs.

Keuffel & Esser, by same, 3 cs.

BOSTON IMPORTS.

FROM DEC. 16 TO DEC. 21, 1881, INCLUSIVE.

[NOTE.—By order of the Treasury Department at Washington the names of importers of merchandise at this port are withheld from the press. Parties wishing their names to appear in the reports of imports will please communicate with J. Henry Blanchard, No. 103 Milk street.—ED.]

Books.

Order, Prussian, Glasgow, 1 cs.

A. Williams & Co., Malta, Liverpool, 1 cs.

M. Chamberlain, by same, 2 cs.

Soule & Bugbee, by same, 2 cs.

Polley & Co., by same, 1 cs.

C. Schoenhoff, by same, 1 cs.

Order, Polynesian, Glasgow, 1 cs.

Stone & Downer, Samaria, Liverpool, 2 cs.

Paper, &c.

Baldwin Bros. & Co., Malta, Liverpool, 1 cs. manufactured.

Dennison Manufacturing Company, by same, 3 cs.

Order, by same, 2 cs.

Order, Bulgarian, Liverpool, 1 cs. manufactured.

Order, by same, 62 cs. albums.

O. Ditson & Co., Samaria, Liverpool, 7 cs. printed matter.

Order, by same, 6 cs. music.

Paper Stock.

T. J. Jones & Co., G. Killam, Westport, 3 pkgs. paper stock.

Dutton & Schenck, Prussian, Glasgow, 220 bs. paper stock.

Train, Smith & Co., Bulgarian, Liverpool, 123 bs. paper stock.

S. W. Wilder, by same, 120 bs. paper stock.

J. L. Taylor, by same, 60 bs. paper stock.

Train, Smith & Co., Iowa, Liverpool, 484 bs. paper stock.

H. M. Knowles, by same, 465 bs. paper stock.

Butterworth & Griffiths, by same, 715 bs. paper stock.

Soda Ash.

Wing & Evans, Bulgarian, Liverpool, 80 cks. alkali.

J. B. Moore & Co., by same, 69 cks.

Linder & Meyer, by same, 69 cks.

Warren & Co., Iowa, Liverpool, 303 cks.

J. L. & D. S. Riker, Malta, Liverpool, 51 cks.

J. L. & D. S. Riker, by same, 52 cks. alkali.

Caustic Soda.

E. B. Fowler, Iowa, Liverpool, 50 bbls.

Venetian Red.

C. L. Andrews, Prussian, Glasgow, 100 bbls.

Sal Soda.

E. & F. King & Co., Iowa, Liverpool, 732 bbls.

Bleaching Powder.

Morey & Co., Bulgarian, Liverpool, 108 cks.

Wing & Evans, by same, 132 cks.

Warren & Co., by same, 387 cks.

Linder & Meyer, by same, 80 cks.

Geo. Watson, Jr., Iowa, Liverpool, 107 cks.

Warren & Co., by same, 308 cks.

J. L. & D. S. Riker, Malta, Liverpool, 101 cks.

Ultramarine.

Morey & Co., Bulgarian, Liverpool, 20 cs.

Hide Cuttings.

T. Groom & Co., Iowa, Liverpool, 75 pkgs.

PHILADELPHIA IMPORTS.

Paper.

Bullock & Crenshaw, Illinois, Liverpool, 1 cs.

Paper Stock.

John Barbour, Illinois, Liverpool, 16 bs. rags.

Thos. Sykes, by same, 8 bs. rags.

Soda Ash.

A. Douredoure, Illinois, Liverpool, 64 cks.

Brown Bros. & Co., by same, 105 cks.

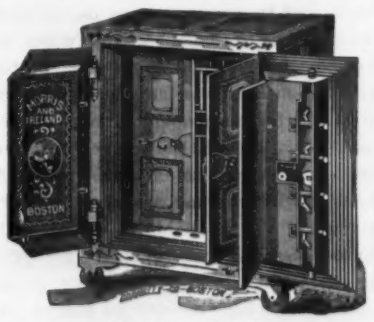
S. & W. Welsh, by same, 50 tcs.

GANDY'S PATENT
AMERICAN COTTON
MACHINE BELTING
Manufactured by
THE GANDY BELTING CO.,
Hollingsworth Street, Baltimore, Md.

ADVANTAGES.—Much cheaper and stronger than leather. Thoroughly waterproof, and not affected by temperature. Clings well to the pulleys. Runs true, and can be made any length without joints.

☞ Used in all the principal paper mills of Great Britain.

MORRIS & IRELAND'S
NEW IMPROVED
EIGHT-FLANGE
Fire-Proof Safe
THE ONLY 8-FLANGE SAFE MADE IN THE WORLD.



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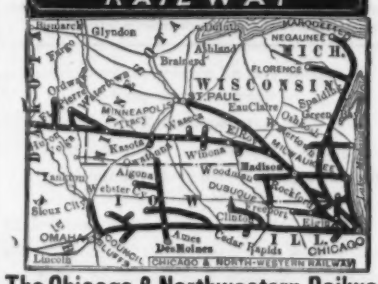

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All Ticket Agents sell Tickets by this Line.

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The Paper Trade Journal.

DEVOTED EXCLUSIVELY TO THE INTERESTS OF

The American Paper Trade.

Weekly, $4.00 per Annum.

Single Copies, - - - 10 Cents.

NEW YORK: SATURDAY, DEC. 24, 1881.

Advertisements cannot be received for insertion in the current week later than 9 A. M. on Friday. The charge for advertising is 25 cents a line, each insertion. Special terms for standing and displayed advertisements to be had on application. Card in Directory Column and one copy of paper, $15 a year.

THE PAPER TRADE JOURNAL is the recognized organ of the various Paper Makers' Associations of the United States.

THE JOURNAL contains the latest and fullest information relative to the paper trade in all parts of the world, including descriptions of new appliances and processes for making paper, experiments with new fibres and other materials, a record of the water supply, with the latest manufacturing news in all parts of the country. It gives the cream of all the foreign technical journals which relate to the paper interest, besides communications from competent persons in the trade, both at home and abroad. The market review and quotations show the state of trade in all the principal cities, and no pains have been spared to make these accurate and complete.

Subscription and postage for Great Britain, per annum..... £1

Subscription and postage for France, per annum..... 25 francs

Subscription and postage for Germany, per annum..... 24 reichsmark

Foreign subscribers may address our New York office.

Communications on matters of interest to the trade are earnestly solicited from all quarters, and if used will be liberally paid for. Items of news and facts of all kinds in relation to the state of the mills, &c., will be gladly received.

All communications must be addressed to

HOWARD LOCKWOOD,

Publisher and Proprietor,

No. 74 Duane Street, N. Y.

BRANCH OFFICES.

Philadelphia Office: J. VIENNOT, General Manager, 407 WALNUT STREET.

Western Office: P. G. MONROE, General Manager, 8 LAKESIDE BUILDING, CHICAGO, ILL.

FOREIGN GENERAL AGENTS.

W. F. Catcheside	5 Ludgate Circus Building, London.
Elfwing & Co	Stockholm, Sweden.
John L. Sprague	Gibraltar, Spain.
Leonardo Pardo	Vigo, Spain.
S. E. Haine	Antwerp, Belgium.
G. Galvagno	Turin, Italy.
S. Bernard	Venice and Florence, Italy.
G. Gade	Christiana, Norway.
J. H. de Bussy	Amsterdam, Holland, and the Dutch East Indies.
John Hogan	Melbourne, Sydney, and Adelaide, Australia.
W. Bartleet Langdridge	Auckland, New Zealand.
R. T. Wheeler	Dunedin, New Zealand.
W. Snelling	Brisbane, Queensland.
A. G. Webster	Hobart Town, Tasmania.
Knight & Co	Newchwang, China.
I. D. Clark	Shanghai, China.
Sargent, Farsari & Co	Yokohama, Japan.
A Illustraçao Brasileira	Rio de Janeiro, Brazil.
Camilo Garcia	Puntarenas, Costa Rica.
Federico Caine	Havana, Cuba.
Seymour Keeler	Valdivia, Chili.
José A. Barros	Barranquilla, Colombia
Pedro Obregon	La Guaira, Venezuela.
Imp. de "El Ferrocarril"	Montevideo, Uruguay.
Bethencourt e hijos	Curaçoa, W. I.
Da Costa & Co	Barbadoes, W. I.
J. O. Ryder	Tamatave, Madagascar.
I. J. Cohen de Lissa	Port Louis, Mauritius.
Joanquin G. Castilla	Tampico, Mexico.
G. C. Cato	Durban, Natal.
Thomas G. Thrum	Honolulu, Sandwich Islands.
John G. Clark	Kingston, Canada.
C. Haight	Toronto, Canada.
Alex. D. Campbell	New Westminster, British Columbia.

TO CORRESPONDENTS.

As THE PAPER TRADE JOURNAL is the recognized vehicle of communication in matters of trade interest, we will be glad to receive correspondence from all parts of the country. Information and suggestion upon paper-making topics are especially valuable, and manufacturing news and personal items are equally acceptable.

Subscribers to THE JOURNAL can be supplied with the best cloth binder in the market. Deliverable at the publication office. Price, $1.25.

Readers of this paper who avail themselves of the information obtained from its columns, by advertisement or otherwise, are requested to notify their correspondents of the source of their information.

WISHING you all a very merry Christmas.

WE miss our paper-making, letter-writing friends this week. Are there no topics for discussion, no subjects for inquiry?

LAST week a correspondent wanted to know how to make a wet felt last the longest. Nobody has answered, and we would like to ask if it is because nobody knows.

OUR English contemporaries have taken up the consideration of short weights and counts, and take a right view of such practices. They are fully in accord with our position on this subject.

THE London correspondent of THE JOURNAL cautions the American trade against wet bagging. He refers to an instance coming within his own knowledge. We refer our readers to his letter in another column.

WE propose to set apart a column in THE JOURNAL at the beginning of the New Year for the mill hands to keep up. Personal inquiries, talks, remarks, &c., and even a little "chaff" will all come in. If "Old Hand" wants to point a gun at "T. R." he can do so, and *vice versa*.

WE are about to begin another year. Have business men studied the future to any extent? There are lessons to be derived from recent failures. Compromises at ten or fifteen cents on the dollar ought not to be made when trade is good and prosperty abounds. Careless buying and still more careless selling seem to be practised. Long credits are given and these are supplemented by long lists of liabilities, with surprising small assets. What is to be the result?

GERMAN paper makers, it is said, are advancing in the manufacture of wood pulp, and they are certainly devoting much attention in that direction. The *Papier Zeitung* of a recent date says: "Our issue of to-day may again serve as a boundary stone in the history of paper making. After sinking millions in the attempt to manufacture good paper from wood by means of chemical treatment, most of the cellulose factories are now profitably employed, thanks to improvements in processes, to the enhanced cost of competing fibres and to lower prices for soda ash. Since the manufacture of soda by the ammoniacal process has been extended so materially, prices have declined very much, and the chances are that they will do so still more in the future. While this is the case it is to be foreseen that rags, esparto and straw, barring occasional fluctuations, will not vary much from their present level of values, and it therefore seems that the manufacture of cellulose has now become one of the permanently established branches of industry. We have in Germany a number of cellulose factories that have long since cast off their swaddling clothes, and now produce a superior article. Our to-day's number is wholly printed on a wood pulp paper, made without the admixture of any other fibre, and the excellent quality of the paper speaks for itself."

RECURRING to a subject upon which we have had considerable to say and upon which, at present, not too much can be said, we want to call attention again to our export trade and its demands upon our manufacturers. Some are beginning to realize the importance of a foreign connection, others are beginning to think of it, while the greater number of people who produce goods which are fit to send abroad are more than indifferent, and in many instances declare that their home trade is sufficient. Of the last class of individuals we ask: How long do you expect the present industrial prosperity to last? If a manufacturer has all or more than he can do to comply with current home requirements, it does not by any means follow that he is always to be thus happily situated. Ages follow ages, cycles follow cycles, and trade is not exempt from the changes which are induced. We all know that periods of commercial and industrial prosperity are followed by corresponding periods of depression. We are now, perhaps, at the height of our prosperity. Before the decade rolls away we may feel the strait into which the changes of business may bring us, and then we shall seek to gain the ground which we have neglected. Will it not then be too late? Competition is induced by prosperity, and when our manufacturing resources are developed beyond the needs of our population and disorganization in the market follows, it will be found a very satisfactory thing to have an established foreign trade to keep our factories running. All parts of the world do not share alike in the enterprises which develop so fast in our energetic and growing country; but remote people are being educated to the character of our goods, and their demands would increase were our manufactures well set before them. American papers find a ready market abroad, and it should therefore be a study and a desire to extend our export trade. We are finding that we can compete with the manufacturers of other countries. Shall we occupy the field or wait until some one else planted and harvested?

Changes, Removals and New Firms.

A. K. Stehley, stationer, &c., Hays City, Kan., has sold out.

H. C. Stivers, publisher, Little Falls, Minn., has sold out to Simmons & Fuller.

Charles & Battle, publishers of the *Southerner*, Tarboro, N. C., have dissolved partnership.

Linn J. Ladd, publisher of the *Leader*, Vandalia, Mo., has sold out to Chapel G. White.

The firm of Safdi Brothers, printers, Cincinnati, has been changed to Oppenheimer & Co.

Payne & Marsden, publishers of the *Mining News*, Ruby Hill, Nevada, have dissolved partnership.

W. W. Thompson has been elected president of the Southern Railway News Company, Louisville, Ky.

Samuel Bard, paper maker, Logansport, Ind., has been succeeded by the Logansport Paper Company.

Jacob Mitchell, Palmyra, Mich., has sold his paper mill to Andrew Mitchell and Benjamin Tisdale.

Robert F. Hewitt and C. A. Lakin have built a paper mill at Niles, Mich., and are manufacturing straw and leather board.

Osborne N. Sargent, steel-plate engraver and wedding stationer, Boston, has removed to 328 Washington street, *Transcript* building.

Rev. A. W. Coan is now editor of the *Herald of Gospel Liberty*, Dayton, Ohio, and C. W. Garoutte is the publishing agent. These gentlemen succeed the Rev. T. M. McWhinny, who was both editor and agent.

Frank D. Phinney, book and job printer, 4 Brighton avenue, Rochester, N. Y., having accepted the post of superintendent of the Baptist Mission Press, Rangoon, Burmah, has sold his entire outfit and business to Judson J. Withall, who has removed it to 39 North Union street, Rochester, where he will continue it in all of its branches.

Chase & Frater, publishers, Brainerd, Minn., have dissolved partnership. Chase continues.

Griffith & Startzman, booksellers and stationers, What Cheer, Iowa, have dissolved partnership.

On January 1 a new paper warehouse will be started in Cincinnati under the name and style of Ross, Rollins & George.

Rosser, McClure & Morley, bookbinders and printers, Lafayette, Ind., have dissolved partnership. McClure & Morley continue.

The Uptown Advertiser, New York, is now called *The Sunday Advertiser*, Stein Brothers, 1,652 Third avenue, are the publishers.

E. P. Chapin and the Chapin Paper Company, Springfield, Mass., have consolidated under the style of the Chapin Paper and Pulp Company.

The Jarvis Furnace Company has opened a branch office at 130 West Second street, Cincinnati. This will be under charge of its Western agent, F. H. Pond.

Henry Lindenmeyr having bought out the stock of paper and other assets of J. H. Van Kirk & Co., has also taken the agency for the sale of the full line of the Keith Paper Company's papers.

The *West Chicago Banner*, formerly *Union Park Banner*, published by Turner & Lloyd, 638 West Lake street, Chicago, is now the *West Chicago Banner*, Frank E. Stanley, 186 West Madison street, being the publisher.

The C. C. White Paper Company has purchased the business of C. C. White, 151 Chambers street, New York, and will continue the manufacture of toilet paper, and are manufacturers' agents and dealers in paper and twine. C. C. White is president of the company, and Robert H. Leslie is secretary and treasurer.

Failures.

Randel & Bruno, printers, New York city, have made an assignment.

Warren Chichester, dealer in paper and twine, New York City, has made an assignment.

Desois & Co., stationers, &c., Montreal, Can., have compromised at fifty cents on the dollar.

E. W. Flaxington, manufacturer of paper boxes, Philadelphia, is advertised to be sold out by the sheriff on the 22d inst.

The fixtures and machinery of the Copper-graph Engraving Company, of Nos. 264 and 266 Water street, have been sold out by the sheriff. The company was incorporated last July, with a nominal capital stock of $100,000, the cash capital being about $6,000. The machinery was chattel mortgaged for $3,500.

The committee appointed last week to investigate the affairs of Miller, Ussing & Co., has not as yet called the creditors together, but is engaged in preparing its report, and will probably be ready in the course of the coming week. The statement that the firm is indebted to the Agawam Paper Company is incorrect, as that company had had no dealings with the insolvent firm.

A meeting of the creditors of J. H. Van Kirk & Co. took place on Tuesday at the Stationers' Board of Trade. The committee of creditors submitted two offers it had received to purchase the entire stock and assets of the firm. These offers were from Carter, Rice & Co., of Boston, at $27,000, and Henry Lindenmeyr at $30,000 cash. The committee recommended that the offer of Mr. Lindenmeyr should be accepted as for the best interests of all concerned. The assignee has acted upon this report of the committee, and has closed out the stock and assets to Mr. Lindenmeyr as suggested. The creditors will probably receive a dividend of about 25 per cent.

A meeting of the stockholders of the American Book Exchange was held on Monday at No. 764 Broadway. John B. Alden, the president of the company, occupied the chair. A good deal of time was spent on the part of some of the gentlemen present in finding fault with the way in which Mr. Alden had managed the affairs of the concern, and one irate clerical gentleman characterized him as a "chimera." A committee, consisting of Richard Hendy, W. G. Halsey and E. C. Cunningham, was appointed to examine the books of the Exchange and report to a meeting of the stockholders, to be held yesterday at noon. A meeting of the creditors of the concern took place on Wednesday at the Stationers' Board of Trade, at which the committee submitted a report, which consisted chiefly of a letter from Mr. Randall, the receiver, reviewing the efforts he had made to ascertain the assets and their condition. He said that the most valuable portion of the plates, including the "U. K." plates, were sold to a number of the paper dealers constituting what was called the "Syndicate," of which Mr. Squier (Frank Squier, of Perkins, Goodwin & Co.) was the agent. They were sold for a specific sum of money, with the right to repurchase them at fixed prices within certain dates, which right to repurchase the Exchange has forfeited. He believed, however, that the plates were merely pledged, and could be obtained from their holders for less than the Exchange received for them. He recited in his letter to the committee the fact, that Mr. Alden had made attempts to sell by auction the most valuable portion of the miscellaneous books, and at private sale to Alden & Chadwick and various other parties, without receiving therefor any security. The report charges Mr. Alden, in very strong terms, with trying to make away with assets of the concern, which should properly be in the hands of the Receiver. The Receiver, it is understood, will take immediate possession of all of the publications and other assets remaining undisposed of. W. D. Wilson was appointed a committee to act in conjunction with the Receiver, to inquire further into the matter and report at a meeting to be held on January 11.

Chattel Mortgages.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; and Real, a mortgage on real estate.]

Mortgagor.	NEW YORK CITY.	*Amount.*
C. Flattich & Co. (R.)		$646
J. B. Foot		450
J. N. Hydell		105
Edwin Ives (R.)		279
P. H. Reilly		1,000
Badin & Co		450
Mary J. Campbell		3,138
M. L. Gump		300
J. McNulty		386
M. P. Prout		186
	NEW YORK STATE.	
The *Banner* Printing Company, Buffalo		443
H. A. Philp & Co., Brooklyn, W. D. (R)		1,200
	MIDDLE STATES.	
Powell & Bower, Mount Holly, N. J		450
	EASTERN STATES.	
John Bird, Boston, Mass		75
Martin Garrison & Co., Boston, Mass. (B. S.)		400
Joel Gurdy, Boston, Mass		150
John P. Tenney, Boston, Mass		2,500
Isaac Greenbaum, Boston, Mass		400
John E. Simonds, Boston, Mass		300
	WESTERN STATES.	
M. G. Wadsworth, Auburn, Ill		300
James G. Ewers, Milton, Ind. (Real)		1,000
F. H. Drake & Co., Detroit, Mich. (B. S.)		600
M. M. Pomeroy, Denver, Col		2,500
M. A. Webb, Fort Wayne, Ind. (Real)		1,500
Eugene Hunt, Vinton, Iowa		225
Frederick J. Beauvais, St. Louis, Mo		387
	SOUTHERN STATES.	
C. K. Stribling, Baltimore, Md. (B. S.)		1,500

Fires.

The paper mill owned by the Star Paper Company, Shortsville, N. Y., was burned on Monday night last.

A fire, caused by the explosion of a kerosene lamp, occurred on Thursday evening in the machine room of the Watertown Paper Company's mill, in Watertown, N. Y. The loss is estimated at $8,000; fully insured.

About seven o'clock on last Saturday evening a fire, said to have originated in the boiler-room, broke out in the building 452 Broadway, this city. The first floor, basement and sub-cellar were occupied by A. & E. Wallach, importers and dealers in fancy goods and stationers' supplies, and before the flames could be extinguished they spread to some of the upper floors of the building. Almost everything belonging to A. & E. Wallach was damaged either by fire or water and their loss is estimated at $200,000, on which there is an insurance of $165,000. As soon as possible the firm will start in business again, and one of the Messrs. Wallach will leave for Europe directly for the purpose of selecting goods for the spring trade.

Accidents.

Orrin Cash, employed in one of the Holyoke paper mills, had his hand crushed and arm burned on Tuesday last.

John T. Harper, employed in the Valley Paper Mill at Lenox Furnace, Mass., caught his clothing in the gearing of the suction pump the other day, and his pocket-book and rule saved him from being killed. His clothes were nearly all torn from him.

In Town.

Wellington Smith, Lee, Mass.; E. P. Chapin, Springfield, Mass.; G. H. Holbrook and Mr. Frazer, Holyoke, Mass.; A. G. Hapgood, Boston, Mass.; J. B. Crane, Dalton, Mass.; Robert B. Crane, Westfield, Mass.; D. M. Bare, Roarings Springs, Pa.; C. H. Wardlow, Middletown, Ohio; E. B. Ripley, Unionville, Conn.; E. B. Dennison, Portland, Me.; C. E. Callender, Greendale, Mass.; William May, Lee, Mass.; G. C. Walter, Mill River, Mass.; S. P. Train, Boston, Mass.; L. C. Woodruff, Buffalo, N. Y.

Manufacturing News.

EASTERN STATES.

The Portland Water Company, Portland, Me., is putting in one of Heald & Morris' No. 12 pumps of a capacity of 14,000,000 gallons in twenty-four hours.

An addition in the shape of two engine houses is being made to the Parsons Paper Company's Mill at Holyoke. The upper stories will be devoted to the engines which will be used for running the machines. The lower stories will be used as pump rooms.

The New Hampshire Chemical Pulp Company, Bristol, N. H., is completing repairs upon its mill, and expects to commence active operations by January 1, 1882. Mason & Berry are manufacturing about 6,000 pounds per day, which is all used by Mason, Perkins & Co., who have recently doubled their boiler capacity and are doing an extensive business.

The P. C. Cheney Paper Company, Manchester, N. H., is putting in a 150 horse-power Lawrence engine. It has set two boilers with the Jarvis furnace.

L. Lincoln & Co., North Dighton, Mass., has added four 600-pound engines, his mill having a producing capacity of 6,000 pounds in twenty-four hours. The machinery is all new and the power is ample at all seasons.

P. C. Baird has just placed a new, large steam boiler in his paper mill at East Lee, Mass.

The Vernon Paper Company, Russell, Mass., is now running day and night with a force of 180 hands. The average production of the mill for some time has been five tons of paper every twenty-four hours. In view of future contingencies, a new 400 horse-power Corliss engine is soon to be put in.

It is reported that the pulp mill at East Dover, Me., is to be converted into a woolen mill.

John Robertson, New London, Conn., has added one 350-pound engine, and the capacity of his mill is now 3,000 pounds in twenty-four hours.

C. H. Dexter & Son, Windsor Locks, Conn., have added one Gould engine, one 88-inch Fourdrinier, and are producing ten tons of paper every twenty-four hours.

The Smith Paper Company, Lee, Mass., since it has put in its 90-inch Fourdrinier, has increased its product to 150 tons per week.

The Nonotuck Paper Company, Holyoke, having added two 1,000-pound and one Jordan engine and a 72-inch Fourdinier to its plant, has increased its production to ten tons in twenty-four hours.

The Agawam Paper Company, Mittineaque, Mass., has added one 1,000-pound and one 500-pound engines, increasing its capacity to three tons per day.

Tanner & Faxon, Lee, Mass., having added two 600-pound engines are making 5,000 pounds of paper per day.

Hartford Paper Company, Poquonock, Conn., has substituted a 1,000-pound engine for a 250-pound engine at its No. 1 Mill. This mill's capacity is now 3,500 pounds in twenty-four hours. The same company has put in at its Franklin mill one 500-pound engine.

Wm. Robertson & Sons, Putney, Vt., have put in a 600-pound engine.

The Woodland Mill, belonging to the Hartford Manilla Company, Hartford, Conn., contains six 700-pound engines, one 62-inch cylinder machine, and one 78-inch Fourdrinier. It was both water and steam, and has a producing capacity of six tons of manillas every twenty-four hours.

S. I. Warren & Co., Cumberland Mills Village, Me., have added one 1,000-pound and one Jordan engines; one 80-inch Fourdrinier, and are now turning out 25 tons of paper every twenty-four hours.

The Ripley Manufacturing Company, Unionville, Conn., has built a new paper mill, called the "Sunnyside Mill." E. B. Ripley is president and treasurer of the company, and John Scantlin is secretary. The mill contains two 500-pound engines, one 48 inch wet machine, and is run by water on binders', leather, and press boards. The capacity is 4,000 pounds in twenty-four hours.

The capacity of the Waverly Paper Mills, owned by Peter Adams, Buckland, Conn., has been increased from three tons to six tons per day. A Jordan engine, two 1,200-pound engines and an 86 Fourdrinier have been added to the equipment.

MIDDLE STATES.

The mill of the Silver Spring Paper Company at Bloomfield, N. J., now being operated by E. M. & R. Fulton, will be sold at auction at Newark, N. J., on February 18, by E. N. Miller, the receiver.

Burr Brothers, Philadelphia, have put in a new sixty-horse boiler, and built a seventy-foot brick stack, and have enlarged the machine-room at their mill, at York, Pa.

L. K. Heathcote & Co., manufacturers of the Keystone felts, Glen Rock, Pa., are adding a steam engine to their present power so as to increase their facilities for meeting the increased demand for their feltings, which has doubled within a short time.

Martin & W. H. Nixon, Philadelphia, Pa., have added four 700-pound engines to the equipment of their Flat Rock Mill, increasing the daily capacity of this mill to fifteen tons.

W. N. Sprague, Middle Falls, N. Y., has added a 500-pound engine to his plant.

C. S. Garritt, Upper Darby, Pa., has put two 500-pound engines into his mill.

The Hart Lot Paper Company, Hart Lot, N. Y., has added one 800-pound engine, increasing the capacity of its mill to three tons in twenty-four hours.

H. R. James, Ogdensburg, N. Y., has put in

his mill two 950-pound wood-pulp machines, increasing the capacity to 5,000 pounds in twenty-four hours.

The Westport Pulp Company, Limited, has built a new wood-pulp mill at Westport, N. Y. Steam power will be used, and the producing capacity of the mill will be two tons of pulp (dry) in twenty-four hours.

Charles Rockwell, under the style of the Rockwell's Falls Pulp Company, has built a mill at Hadley, N. Y. The mill has a capacity of five tons of chemical fibre every twenty-four hours.

The new mill of the Beaver Falls Pulp Company, Beaver Falls, N. Y., contains seven runs of refiners and one 60-inch machine. It has a water-power with 18 feet head, seven 27-inch wheels, two draft-box wheels 44 inches in diameter. The mill will make spruce and poplar wood pulp—five tons (dry) in twenty-four hours. It will start up next week.

WESTERN STATES.

Jacob Mitchell, Palmyra, Mich., has sold the Monroe paper mill, at Monroe, Mich., to Andrew Mitchell and Benjamin Tisdale for $10,000. Mr. Mitchell for the last few years has been employed by the Monroe Paper Company.

Robert F. Hewitt and C. A. Lakin, Niles, Mich., have built a new mill, known as the Excelsior straw board mill. It contains two 1,200-pound engines, one 62-inch straw-board machine, and is run by water on straw and leather board, producing seven tons in twenty-four hours.

The Logansport Paper Company, Logansport, Ind., was formed on December 12, and will run the mill formerly owned by Samuel Bard. It is now running on straw wrapping.

Michigan Wood Pulp Company has built a new mill at Niles, Mich. This mill contains one 1,000-pound and one Jordan engine, one 72-inch wet machine, one 74-inch wood-board machine, twenty-one 36-inch driers, and six cylinders. It is run by water on wood-pulp board, with a capacity of six tons daily.

The Morrison Manufacturing Company, St. Joseph, Mich., A. H. Morrison, president and treasurer, Don Morrison, secretary and superintendent, has a new paper mill, which contains one 62-inch cylinder machine and one 42-inch wet machine. The mill uses steam power, and has a capacity of two tons air-dried binders' board and five tons straw and rag wrapping paper in twenty-four hours.

SOUTHERN STATES.

George W. Keller, Houcksville, Md., has put in a number of 44-inch driers and a 25 horse-power engine, thereby doubling the capacity of his mill.

Valentine Bollinger, of Shamberg, Md., now runs the mills formerly operated by Thomas E. Ensor and John Kearney, at Parkston, Md.

SPECIAL NOTICES.

[*Insertions under this heading will be charged 50 cents a line. Payment invariably in advance.*]

EUGENE SULLIVAN,
Packer of Rags and Paper Stock,
356 & 358, WATER STREET, NEW YORK.

New Zealand Exhibition, 1882.

American Manufacturers are informed that John Hogan will take charge of Exhibits in the United States Court and guard the interests of his principals. Particulars may be obtained at the office of this paper.

Samples and show-cases may be sent by sailing vessel to Sydney, if none laid on for Lyttelton, the port at Christchurch. Small parcels by Contanseau's Rapid Foreign Express, 128 Broadway, New York.

Reference: Fred. A. A. Wilson, manager Mercantile Bank, Sydney, or Howard Lockwood, proprietor "Lockwood Press."

Cable address: Hogan, Sydney. Postal address: John Hogan, Box 337, G. P. O., Sydney, New South Wales.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, FRIDAY, December 23, 1881.

THE MONEY MARKET.—The money market has worked a shade easier, although more or less stringency is still experienced by borrowers. The Treasury disbursements on account of called bonds are not large enough to make money abundant, but they are sufficient to counteract the withdrawals occasioned by large Government revenues. After the turn of the year and the annual settlements have been completed, we shall probably have an easy money market for a considerable period.

The stock market is both dull and weak, for, although there may have been feeble attempts at a rally, prices generally closed lower than a week ago.

Government bonds show little change in prices, if we except a slight advance in the extended sixes.

Railroad mortgages are generally weak, in sympathy with the depression in the share list.

The market for foreign exchange was dull, and closed weak.

The posted rates at the close were:

Bankers' sterling, 60 days, actual	$4.80 @4.80¼
Bankers' sterling, sight, actual	$4.84 @4.84¼
Cable transfers, nominal	$4.84½@4.85½
Prime commercial sterling, 60 days	$4.79¼@4.79½
Documentary sterling, 60 days	$4.78¾@4.79
Paris, bankers', 60 days	5.25⅝@5.26¼
Paris, bankers', sight	5.20⅝@5.21¼
Antwerp, commercial, 60 days	5.29⅜@5.30
Swiss, bankers', 60 days	5.25 @5.25⅝
Swiss, bankers', sight	5.20 @5.20⅝
Reichsmarks (4), bankers', 60 days	94 @ 94⅛
Reichsmarks (4), sight	95 @ 95⅛
Guilders, bankers', 60 days	39¾@ 39⅞
Guilders, bankers', sight	40⅛@ 40¼

THE PAPER TRADE.—Dealers are now experiencing the usual quietude incident to the closing weeks of the year, but the volume of trade is fully up to the December average, and prices show little or no variation. The first and last months of the year are the dullest of the twelve, and hence very little animation is looked for during the next few weeks. Spring trade will begin in February, and in the meantime business men will be largely occupied with their annual settlements and preparing for a new start. The assortment of stocks with city dealers is not large, and very few manufacturers show any urgency to secure new orders, most all being fairly engaged. A notable evidence of the prosperity of trade at this time is to be seen in the unusually small number of business changes announced to occur at the beginning of next year, showing that most business men are satisfied to leave well enough alone and are averse to making changes.

JUTE BUTTS.—Naturally at this season of the year business is very quiet, and the transactions during the week have been confined to ordinary jobbing sales, with a fair demand for small lots of Paper Butts at 2 11-16c. cash, and 2¾c., sixty days. It is rumored that some spot paper quality has been offered at 2⅝c., but we fail to hear of any sales at such a figure. Paper Butts to arrive are freely offered at 2 9-16@2⅝c. We note sales of 1,000 bales spinning quality on spot at 3c.

WOOD PULP.—There is a continued brisk demand for all qualities. Poplar is doing a little better, some of the best makes finding buyers at 2½c., while inferior can be obtained at 2⅜c. Spruce ranges from 2¾ to 3c., but very little of good qaality is to be had under 2¾c., while the best is held at 3c., according to distance of shipment. Chemical Fibre finds a steady sale at 5¼@5½c. for Bleached.

DOMESTIC RAGS.—Manufacturers continue to buy very moderately pending their annual inventory, and business has been quite dull this week, but most dealers still ask full prices. We quote: No. 1 City Mills, 4¾@5c.; No. 2 do., 2¾@3c.; and Seconds, 1⅝@1⅝c. The sales include 150 bales No. 2 City Whites at 2¾c.; 25 bales No. 1 do. at 4⅞c.; 250 bales Seconds at 1⅜@1⅝c.; and 7 tons Cotton Canvas at 4⅝c.

FOREIGN RAGS AND PAPER STOCK.—Business has been almost at a stand this week, importers and dealers having made very little effort to induce manufacturers to buy pending the period of taking their annual inventory. A great many offers have been made this week, and this would seem to indicate that the time of urgent need with some cannot be very distant. It is estimated that there are about 1,000 tons of rags—the greater portion of them Russian Linens—on the vessels already known to be lost and those overdue, bound to this port and Philadelphia and Boston. The deficiency of such a large quantity of rags as this cannot fail to affect the market, and an advance in prices with any improvement in the demand is quite probable. The trade look for a much better business in the course of the coming month. Included among the few sales reported were 10 tons L. F. B. Hamburg Linens at 4⅝c.; 40 tons S. P. F. do. at 4½c.; 20 tons S. P. F. F. do. at 5c.; 15 tons Light Fine French Prints at 3⅛c.; 25 tons French Folded Newspaper at 1⅝c., and 50 tons English Hardware Papers at 1 5-16c. The arrivals during the past week aggregate 1,063 bales and bags, embracing 765 bales Rags, and 298 bales Old Paper.

BAGGING, &c.—The slightly weaker tendency shown in Jute Butts this week has been used to depress Bagging, but in the absence of any important business, prices are nominally steady. We hear of an offer of 2.60c. for No. 1 Manchester, which was refused, the importer not being able to see his way clear to cover cost of laying down here. Manilla Rope is in moderate request and prices unchanged. Among the reported sales were 100 tons Jute Rope, to arrive, December, January and February shipment, at 2⅞c.; 20 tons Diamond J. Jute Waste at 2.35c.; 20 tons English Manilla Rope, to arrive, at 3¼c., and 10 tons Domestic Rope at 3½c.

OLD PAPERS.—There is a light trade in some of the low and medium grades, but, as a general thing, packers are making no large sales, and prices are nominally steady. Among other sales were 7 tons Folded News at 1⅞c.; 10 tons Solid Book Stock, at 3⅛c., and 50 bales Commons, at ⅞c. We quote: No. 1 Hard White Shavings, 4@4¼c.; No. 1 Soft White do., 3½@4c.; White and Colored Mixed do., 2¾c.; Solid Blank and Printed Books, 3@3½c.; Mixed Book Stock, 2¼@2⅜c.; Light Book Stock, 1¼@1⅜c.; Pure Manillas, 2⅜@2⅝c.; Folded News, 1⅞@2c.; Bogus Manillas and Hardwares, ⅞@1c.; Commons, ¾@⅞c.; Binders' Boards Clippings, 1 3-16@1¼c.; Straw do., 1⅛@1 3-16c.

STRAW.—There is a continued fair inquiry at steady prices. We quote, in New York, 70@80c. for Long Rye, 55@60c. for Short do., and Oat 40@50c.

ROSINS.—The lower grades are very strong, and owing to the moderate rates, and some speculative inquiry, are held a little higher. We quote f. o. b., cartage included, viz.: C Strained, $2.70; D Good Strained at $2.85; E at $3; F Good No. 2 at $3.10; G Low No. 1 at $3.25; H No. 1 at $3.35; I Good No. 1 at $3.45; K Low Pale at $3.50; M Pale at $3.80; N Extra Pale at $4.25 and W G at $5.25.

CHEMICALS.—There has been very little activity in the market, manufacturers generally confining their purchases to immediate requirements, and very few are inclined to anticipate their wants much. There have been only few changes in prices, which are steadily held. The stocks on spot are not large, and holders are not showing any anxiety to force goods in the absence of demand. The loss of several vessels, recently, having on board Soda Ash and Bleaching Powders, has strengthened the market for these, and a further advance in freights has also its effect upon the market. Sales are said to have been made here as follows: 100 cks. Bleaching Powder at $1.35@1.45, as to brand and quantity; 200 tons Soda Ash at $1.62½; 250 drums Caustic Soda, 70 per cent., at $3.40; 25 tons Sal Soda at $1.30; 200 barrels Lump Alum at 2⅝c.; 100 barrels Ground Alum at 2½c.; 350 barrels Pearl do. at 2⅝c.; 500 barrels Natrona Porous Alum at 2⅝c.; 50 tons Aluminous Cake at $1.50; 10 cases German Ultramarine at 25c.; 10 cks. yellow Prussiate Potash at 25¾c.; 25 cks. Antichlorine at 2⅞c.; 10 barrels Venetian Red at 1⅝c.; 5 cks. Orange Mineral at 8⅝c.; 50 bxs. Extract Logwood at 8⅝c.; and 5 cks. Brown Sugar of Lead at 9⅝c.

CHINA CLAY, &c.—English Clay continues to receive very little attention, the only movement being in jobbing lots from store. Stocks on spot are only moderate. Sales are reported of about 40 tons Medium at $17@18. Southern is also quiet, the only business reported being of a jobbing character to meet current requirements. Prices are steady and unchanged, the sales making bringing $10.50@11.50, as to quality.

COAL.—With continued free receipts of Anthracite coal, the tone of the market weakens. Saward's *Coal Trade Journal* says: "Business has been good for Anthracite coal, but it is now waning, and the 'boom' has about expended its force. Gathering up the odds and ends is all that can be reported for the past week. Temperature still continues an important factor, and whether the mercury rules low or high, just so are the hopes and fears of the average coal operator graded. We find that there is enough trade doing on old orders to keep things moving along nicely; the stocks are light in all directions, and this puts the trade in good shape for next season, and may prevent any serious decline in rates during the winter months, if there is any average frigidity about the atmosphere. Stove and Chestnut are in good demand; Broken and Egg fairly so, and other sizes easy. We notice the continued heavy output of Bituminous coals at all points; the districts dependent on the seaboard States for customers are doing a large business, and are ahead of last season. It is expected that there will be an increased average rate obtained next year over that of the past. Bituminous coal is wanted in the Middle and Eastern States, and whether it is called Cumberland or Clearfield matters not." Quotations of Lehigh coal at Port Johnson are: Lump, $4.40; Egg, $4.35; Stove, $4.25, and Chestnut, $4. Lackawanna is $3.90 for Lump, $4.05 for Egg; $4.20 for Stove, and $3.90 for Chestnut.

PRICES CURRENT.

NEW YORK MARKET.

Paper Market.

DEALERS' SELLING PRICES.

Ledger and Record	$0.23 @	$0.30
Flat Caps, superfines	18 @	20
Flat Caps, fines	15½@	16½
Flat Caps, engine-sized	11½@	14
Blotting, American	13½@	23
Blotting, English	21 @	25
Book, supersized and calendered	10 @	12½
Book, super-sized and calendered	9½@	10
Book, super-sized and tinted	9½@	10
Book, extra machine finish	8½@	9½
Book, machine finish, low grade	8 @	9
Book, No. 1, shavings & imperfections	7½@	8½
Book, No. 2, shavings & imperfections	7½@	8
News, No. 1	7½@	—
News, rag and wood	6½@	6¾
News, straw	6½@	7
Hanging, superfine, No. 1	9 @	10
Hanging, superfine, No. 2	8 @	9
Hanging, superfine, No. 3	7½@	8½
Hanging, machine satin, No. 1	8 @	9
Hanging, white blank, No. 2	7 @	8
Hanging, white blank, No. 3	6½@	7
Hanging, curtain	5 @	6
Hanging, buff	5½@	6
Hanging, brown	4½@	5
Colored papers, double mediums	9 @	9½
Colored papers, glazed mediums	11 @	12
Colored Papers, tobacco	9½@	10½
Colored Papers, tissues, 20×30, ℘ ream	1.30 @	—
Tissues, black, 20×30, ℘ ream	1.40 @	1.50
White tissue, 20×30, ℘ ream	1.00 @	—
White tissue, 24×36, ℘ ream	1.50 @	—
Manillas, Flour-sack, cream	11 @	12
Manillas, Flour-sack, drab	10½@	11
Manillas, Rope, unbleached	10½@	11½
Manillas, No. 1, light weight	9 @	9½
Manillas, No. 1, heavy weight	8 @	8½
Manillas, No. 2	6½@	7½
Manillas, Bogus	4 @	6
Tissue Manillas, full count, weight and size, 11×15, other sizes in proportion	19 @	20
Hardware, light colored, No. 1	12 @	—
Hardware, No. 1, glazed, tarred	7½@	7
Hardware, No. 1, glazed	6 @	8
Binders' Boards, ℘ ton, No. 1	80.00 @	90.00
Binders' Boards, ℘ ton, No. 2	60.00 @	70.00
Straw Boards, air-dried, No. 1, ℘ ton	55.00 @	—
Straw Boards, steam-dried, No. 1, ℘ ton	60.00 @	—
Straw Boards, steam-dried, No. 2, ℘ ton	55.00 @	—
Straw Boards, steam-dried, No. 3, State, ℘ ton	50.00 @	—
Straw Boards, air-dried, Penn, ℘ ton	50.00 @	55.00
Straw Boards, air-dried, State, ℘ ton	50.00 @	60.00
Straw Wrapping, basis, 15×20, 15½ lb. 20 sheets—		
36×40, from 38 lbs. to 42 lbs. ℘ r'm	1.50 @	—
30×40, from 30 lbs. to 34 lbs. ℘ r'm	1.20 @	—
24×36, from 24 lbs. to 26 lbs. ℘ r'm	1.00 @	—
22×32, from 24 lbs. to 26 lbs. ℘ r'm	85 @	90
20×30, from 14 lbs. to 17 lbs. ℘ r'm	56 @	60
16×22, from 12 lbs. to 13 lbs. ℘ r'm	45 @	—
18×28	48 @	50
15×20, from 7 lbs. to 8½ lbs. ℘ r'm	28 @	—
14×18	24 @	—
12×16	22 @	—
11×15	20 @	—
Straw Wrapping, ℘ lb., heavy weight	3 @	3¼
Straw Wrapping, ℘ lb., light weight	3½@	4
Tea Papers, 16-sheet quires—		
12×18	30 @	—
14×20	40 @	—
Card Middles, ground wood	5½@	7½
Card Middles, long fibre wood	8½@	6½
Card Middles, rag and wood	6 @	9

Woolen Rags.

Comforter Stock	14 @	—
White Woolens	17 @	—
Blue Gray Stockings	14 @	—
White Stockings	16 @	18
Blue Flannels	14 @	—
Reds, old	12 @	13
Reds, new Shirt Clippings	25 @	—
Mixed Softs, free of Carpets	10 @	11
Seamed Cloth	8 @	10
Skirted Cloth	6 @	7
New Cloth Clips	13 @	16
New Satinets, clean stock	3 @	—
Satinets	1⅝@	—
Seams	3 @	3½
Delaines, stripped for extract	3½@	—
Blankets, Woolen	3 @	—
Wool Carpets	6 @	7
Mixed Carpets	2 @	—
White Linseys	3 @	—
Mixed Linseys	2 @	—

Rags, Rope and Bagging.

White Shirt Cuttings, No. 1	6¾@	6⅞
Mill Assorted Whites	5½@	—
Unbleached Muslins	5¾@	6
City Whites, No. 1	4¾@	4⅞
New Canton, Flannels	5¾@	6
New Seconds, light	4½@	—
New Seconds, dark	3⅛@	3¼
No. 2, Whites	2¾@	2⅞
Cotton Canvas	4¼@	4⅜
Linen Canvas, No. 1	4¼@	4⅜
Country White Rags	5 @	5¼
Country Mixed, free of Woolens	2½@	2¾
Seconds (City)	1⅝@	1¾
Colors, per 100 lbs.	90 @	1.00
Manilla Rope	3¼@	3⅜
Manilla Rope, tarred	2½@	2⅝
Gunny Bagging, No. 1	2½@	2⅝
Gunny Bagging, No. 2	1⅞@	2
Kentucky Bagging	4¼@	4⅜
Burlap Bagging, No. 1	2¼@	—
Tar Shakings	2⅛@	2¼
Hemp Twine Stock	4½@	4¾
Jute Waste	1⅞@	2¼

Shavings and Old Paper.

White Collar Cuttings, muslin lined	5⅛@	5⅜
White Envelope Cuttings	5 @	5¼
Hard White Shavings, No. 1	4 @	4¼
Soft White Shavings, No. 1	3½@	3¾
Mixed Shavings, part white	2¾@	3
Ledger and Writing	3⅝@	3¾
Solid Stock	3 @	3⅛
Book Stock, No. 1, light	1¾@	2
Old Newspapers	1¾@	2
Pure Manillas	2⅝@	2¾
Bogus Manillas and Hardwares	1⅛@	1¼
Commons	75 @	80
Binder's Board Cuttings	1¼@	—
Straw Board Cuttings	1⅛@	1¼

English Rags, &c.

New Cuttings, cotton	6 @	6¼
Essex Fines	5¼@	5½
London Fines, cotton	4¾@	5
Outshots, cotton	4 @	4¼
Seconds	2¾@	3
Thirds	1⅝@	1¾
New Print Tabs	3¾@	—
Checks and Blues	3 @	3⅛
Light Prints	2⅞@	3⅛
Light Fustians	2¾@	3¼
Dark Fustians	2⅜@	2½
Black Calicoes	2 @	2⅛
First Canvas Linen	4¼@	4½
Second Canvas Linen	3¼@	3¾
Black Bagging	4¾@	—
Gunny Bagging, No. 1	2⅝@	—
Gunny Bagging, No. 2	1⅞@	2
Mixed Bagging	1¾@	1⅞
Burlaps Bagging, No. 1	2¼@	—
Rope, Manilla	3⅛@	—
Rope, Manilla, tarred	2½@	2⅝
Jute Ropes	2¾@	2⅞
Jute Threads	2½@	2¾

English Old Papers and Shavings.

Hard Shavings, No. 1	4 @	4¼
Soft Shavings, No. 1	3¼@	3⅜
White and Colored Shavings, No. 1	2½@	2¾
White and Colored Shavings, No. 2	2¼@	2⅜
Cream Shavings	4½@	—
Paper-Collar Cuttings	3⅝@	—
Ledgers, Briefs and Letters	3¼@	3½
Newspapers and Pamphlets, extra	2⅝@	2⅞
Old Newspapers	2⅜@	2½
Broken News and Letters	1¾@	1⅞
New Books, solid folios	3⅜@	3½
Old Blank Books	3⅜@	—
Old Printed Books	3⅜@	—
White and Buff Railway Sheets	2½@	2⅝
Railway Tickets	1 @	1¼

Hamburg Rags, &c.

LINENS.

S P F F F	6 @	6⅛
S P F F	5½@	5⅝
S P F	4⅝@	4⅞
F F	3⅞@	4
L F X	3⅝@	3⅞
Extra Fine Blue Linen, light color	4½@	4⅝
L F B	4¼@	4½
Gunny Bagging, No. 1	2⅝@	—
Burlap Bagging, No. 1	2⅝@	2¾

COTTONS.

C S P F F F	4⅛@	—
C S P F F	3⅝@	3¾
C S P F	2¾@	3
F R	3 @	—
C C C	2½@	2⅝
C F X	2 @	2¼
Extra Fine Blue Cotton	3 @	3¼
Cotton Canvas	4 @	4¼

Rope.

T R (tarred)	2 @	2⅛
M R (manilla)	3 @	3¼
P T R (standing rigging)	3¾@	4

Old Papers.

Old Book Paper	3¼@	3½
Old Printed Books	3¼@	3½
Imperfections	2 @	—
White Shavings	3¼@	3½
Colored Papers	2 @	2¼
Writing Papers	3 @	3¼

Ordinary Leghorn Rags.

P P, No. 1 White Linens	5¼@	5⅜
S S, No. 2 White Linens	4¼@	4⅜
T T, No. 3 White Linens	3¾@	—
R R Linen Stripes	4¼@	4½
P C, No. 1 White Cottons	4⅜@	4⅝
S C, No. 2 White Cottons	2⅝@	2¾
T C, No. 3 White Cottons	2¼@	2⅜
R C Cotton Stripes	2¼@	2⅜
C C Colored Cottons	2 @	2⅛

Alexandria Rags.

Whites	2¼@	—
Blues	2⅛@	—
Colors	2 @	—

Memel Rags.

S P F F	4⅞@	5
S P F	4⅜@	4⅝
F F	4 @	—
F G	4¼@	4⅜
L F B	4⅛@	4¼

Trieste Rags.

S P F	4¾@	—
S F F	4¼@	—
S F X	3⅞@	4
S F B	3⅜@	3½

Konigsberg Rags.

S P F F	4⅞@	5
S P F	4⅜@	4½
F F	3¾@	4
L F B	4¼@	4½

Japanese Rags.

Whites, ordinary	2½@	—
Blues, selected	2¼@	2½
Blues, ordinary	2 @	2¼
Lime Japans	1½@	1¾

Extra grades ¼c. higher.

Chemicals, Coloring Materials, &c.

Alum, lump	2⅜@	—
Alum, ground	2½@	—
Alum, pearl	2⅝@	—
Alum, porous	2⅝@	—
Aluminous Cake, "Elephant"	1.50 @	—
Anti-Chlorine	2⅞@	—
Bi-Chromate Potash, American	17½@	—
Bleaching Powders	1.35 @	1.45
Caustic Soda, 70 per cent	3.40 @	—
Clay, China, English, per ton	14.00 @	20.00
Clay China "Star"	13.50 @	14.50
Clay, South Carolina, per ton	10.50 @	11.00
Clay, Terra Alba, English, per ton	25.00 @	30.00
Clay, Terra Alba, American, per ton	10.50 @	11.50
Corn Starch	4⅝@	—
Copperas, American	1 @	1⅛
Extract Logwood	8⅝@	—
Mineral Fibrous Pulp	25.00 @	—
N. Y. Lubricating Co.'s Comp'd, ℘ lb.	10 @	—
Potato Starch	5½@	—
Prussian Blue, dry	25 @	55
Prussiate Potash, American	25¼@	—
Orange Mineral	8⅜@	—
Rosins, good strained, per bbl	2.85 @	—
Rosins, good, No. 2, per bbl	3.10 @	—
Rosins, low, No. 1, per bbl	3.25 @	—
Rosins, No. 1, per bbl	3.35 @	—
Rosins, good, No. 1, per bbl	3.45 @	—
Rosins, pale, per bbl	3.80 @	—
Rosins, extra pale, per bbl	4.25 @	—
Sal Soda	1.30 @	—
Soda Ash, caustic, 48 per cent	1.62½@	—
Soluble Blue	57½@	65
Spanish Brown, dry	1⅛@	1¼
Sugar Lead, white	16 @	—
Sugar Lead, brown	9⅝@	—
Sulphuric Acid, 66 degrees	2 @	—
Ultramarine, blue	25 @	30
Venetian Red	1¾@	—
Vitriol, blue	7¾@	8⅛
Yellow Ochre	1¼@	1½

BOSTON MARKET.

Paper Stock.

Mill Assorted Whites	5¼@	5⅜
Cotton Canvas	4¾@	4⅞
Cotton Canvas, No. 2	3¼@	3½
Gunny Bagging	2⅝@	2¾
Gunny Bagging, No. 2	2 @	2¼
Shivey Bagging	2¼@	2⅜
Waste Woolens	¾@	1
Jute Butts	2¾@	3
White Collar Cuttings	3¾@	4
White Envelope Cuttings	4⅝@	4¾
Hard White Shavings, No. 1	4⅝@	4¾
Soft White Shavings, No. 1	3¼@	3½
White Shavings, No. 2	2½@	2¾
Mixed Shavings (¾ white)	2½@	2¾
Imperfections	1½@	1¾
Book Stocks	3⅛@	3¼
Light Prints	1⅝@	—
Manilla Papers, old	2⅛@	2¼
Hardware and Manillas	¾@	1¼
Straw Board Cuttings	1 @	1¼
Linen Canvas	4⅛@	4¾
White Shirt Cuttings	6¾@	7
Country White Rags	5¼@	5⅝
Country Mixed Rags	2¾@	3
City Whites, No. 2	3¼@	3⅝
Seconds, Country	3¾@	4
Colors	1⅞@	2¼
Manilla Rope	3¼@	3⅜
Binders' or Tar Board Cuttings	1 @	1⅛
Common Papers	¾@	1
Oakum Junk	3¼@	3⅝
Hemp Rope, Tarred	2¾@	3

English Rags, &c.

Essex Fines	5 @	—
London Fines, cotton	4⅞@	5
Outshots, cotton	4¼@	4⅝
Seconds	3 @	3⅛
Seconds, extra	3¼@	3⅜
Thirds	2⅛@	2¼
New Print Tabs	3⅝@	3¾
Checks and Blues	3¼@	3⅜
Light Prints	2⅞@	3
Light Fustians	3 @	3⅛
Dark Fustians	2½@	2⅝
Black Calicoes	1¾@	2⅛
Gunny Bagging, No. 1	2⅝@	2¾
Gunny Bagging, No. 2	2⅛@	2¼
Mixed Bagging	1¾@	1⅞
Rope Manilla	3¼@	3⅜
Rope Manilla, tarred	2½@	—
Jute Ropes	2¾@	3
Jute Threads	2⅞@	—

English Old Papers and Shavings.

Hard Shavings, No. 1	3¾@	3⅞
Soft Shavings, No. 1	3⅛@	3¼
White and Colored Shavings, No. 1	2 @	2⅛
White and Colored Shavings, No. 2	1⅞@	2
Cream Post Shavings	4 @	4⅛
Paper Collar Cuttings	3¾@	3⅞
Ledgers	3¼@	3⅜
Newspapers and Pamphlets, extra	2¾@	2⅞
Old Newspapers and Pamphlets	2¼@	2⅜
Broken News and Letters	1⅝@	1¾
New Books, solid folios	3⅜@	3½
Old Blank Books	3¼@	3⅜
Old Printed Books	3 @	3¼
White and Buff Railway Sheets	2⅛@	—
Railway Tickets	1½@	1⅝

Leghorn Rags.

P P, No. 1 Linens	5 @	5¼
S S, No. 2 Linens	4⅛@	—
T T, No. 3 Linens	3½@	3¾
P, No. 1 Cottons	4¼@	4⅜
S, No. 2 Cottons	2½@	2⅝
T, No. 3 Cottons	2½@	3¼

Alexandria Rags.

Whites	2⅝@	2¾
Blues	2⅜@	2½
Colors	2⅛@	2¼

Smyrna Rags.

Whites	2⅝@	2¾
Blues	2¼@	2⅜
Reds	2⅛@	2¼

Constantinople Rags.

Whites	2⅝@	2¾
Blues	2⅜@	2½
Reds	2⅛@	2¼

New Papers.

Superfine Book	10 @	11
Fine Book	9½@	10
News, Rag and Wood	7¾@	8
News, Straw	7 @	8
News, No. 1, all rag	8½@	9
News, Rag and Wood	6½@	6¾
Manilla, Cream Rope	11 @	12
Manilla, No. 1, Rope	10 @	11
Manilla, Extra Jute	8½@	10
Manilla, Jute and Gunny	8 @	9
Manilla, No. 2	6 @	7½
Manilla, Bogus	4½@	6
Hardware, No. 1, tarred	7½@	8½
Hardware, No. 2	7 @	8
Hardware, red	5 @	6
Straw Boards, air-dried, ℘ ton	50.00 @	60.00
Straw Boards, steam-dried, ℘ ton	45.00 @	55.00
Straw Wrapping, heavy	3 @	3½
Straw Wrapping, light, basis 15×20, 9 lbs	3½@	4
Binders' Boards, ℘ ton	60.00 @	65.00
Leather Board, Common, ℘ lb.	3½@	5
Leather Board, counter	6 @	8
Leather Board, extra	9 @	11
Tar Boards, ℘ ton	110.00 @	130.00

Chemicals.

Aluminous Cake, currency	1⅛@	1¼
Alum, American ground	2¼@	2⅜
Alum, American lump	2⅛@	2¼
Alum, English lump	2⅛@	2¼
Alum, English ground	2¼@	2⅜
Alum, Potash	2⅜@	2½
Anti-Chlorine	3 @	3⅛
Bi-Chromate Potash, Scotch	16 @	17
Bi-Chromate Potash, American	16 @	17
Bleaching Powders	1.30 @	1.40
Blackley Blue	4.50 @	5.00
Caustic Soda, 70 ℘ cent. (for 60 ℘ cent.)	3.35 @	3.45
Clay, English, ℘ ton	19.50 @	20.00
Clay, American, ℘ ton	12.50 @	14.00
Copperas, American, ℘ lb.	90 @	1
Extract Logwood	6½@	7
Lime, common, ℘ bbl	1.00 @	1.50
Prussian Blue, ℘ lb	62 @	65
Prussiate Potash, American	25½@	26
Rosin, common strained, ℘ lb.	2.65 @	2.70
Rosin, No. 2	2.75 @	3.00
Rosin, No. 1.	3.25 @	3.75
Rosin, pale.	4.25 @	5.25
Rosin, extra pale	5.50 @	6.50
Sal Soda, English, ℘ lb.	1.20 @	1.30
Soda Ash	1.60 @	1.75
Soda Ash, refined	1.80 @	2⅛
Soluble Blue	— @	75
Sugar Lead, white	16 @	17
Sugar Lead, brown	9 @	10
Sulphuric Acid, 66°	1½@	1¾
Terra Alba, ℘ ton	15.00 @	25.00
Ultramarine, ℘ lb.	25 @	30
Ultramarine, W. N. G. brand	22 @	24
Venetian Red, ℘ lb.	1⅝@	1.60
Vitriol, Blue	7¼@	8
Yellow Ochre	1½@	1¾

PHILADELPHIA MARKET.

Paper Market.

Extra Super, Calend. and Sized Book	11 @	12
Super Calendered and Sized Book	9½@	10
No. 1 Machine-Finish Book	8½@	9
No. 2 Machine-Finish Book	8 @	8½
Rag News	7½@	8
Straw News	6½@	7
Manilla Rope, No. 1	12 @	—
Manilla Rope, No. 2	10 @	11
Jute Manilla, No. 1, light weight	9½@	10
Jute Manilla, No. 1, heavy weight	8½@	9
No. 2 Manilla	7½@	8
Bogus Manilla	7 @	7½
Colored, 24×38	8½@	9
Colored, 20×25, super-calendered	11½@	12
Tissue, white and colored, 20×30, ℘ r'm	1.00 @	1.30
Tissue, Manilla, 480 sheets, 11×15	20 @	22
Hardware	5½@	6½

Paper Stock.

White Shirt Cuttings	6¾@	7
Unbleached Muslins	5½@	6
Canton Flannels, bleached	5 @	5½
Canton Flannels, brown	4½@	5
No. 1 Whites	4¾@	5
No. 2 Whites	3¾@	4
Blues and Thirds	2⅞@	3⅛
New Blues	3¼@	3½
Colors	1¾@	2
Blacks	1¼@	1⅜
Overall Cuttings	3½@	4
No. 1 Cotton Canvas	4 @	4⅛
No. 2 Cotton Canvas	3 @	3¼
Hard Woolens	½@	¾
White Shavings, Hard	4½@	4¾
White Shavings, Soft	3¾@	4
Book Stock	2½@	2¾
Newspapers	1¼@	1⅜
Mixed Shavings	2½@	2¾
Broken Prints	¾@	⅞
Manilla Shavings	3⅞@	4
Manilla, No. 1	2 @	2⅛
Manilla, No. 2	1 @	1¼

Flour Sacks	4	@	4¼
Binders' Board Cuttings	90	@	1.00
Straw Board Cuttings	90	@	1.00
Common Cuttings, ₩ 100 lbs.	⅝	@	¾
Wadding	2½	@	2¾
Grass Rope	3	@	3½
No. 2 Tarred Hemp	1¾	@	2
Tarred Shakings	1½	@	1¾
Netting	1	@	—
Hemp Twine	4	@	4¼
Jute Rope	2	@	2¼
Black Hemp Bagging	4	@	4¼
Gunny Bagging	2½	@	2⅝
Shivey Bagging	1¾	@	2
Scrap Bagging	1½	@	1⅝
Dyed Bagging	¾	@	—
Cotton Mill Sweepings	2	@	2¼

Chemicals, Coloring Materials, &c.

Alum, lump	2½	@	2¾
Alum, ground	2¾	@	2⅝
Alum, pearl	2⅝	@	2⅞
Alum, porous	2⅝	@	—
Alum, potash	—	@	2¼
Aluminous Cake, Blue Star	—	@	1¾
Aluminous Cake, Pochin's	—	@	1¾
Anti-Chlorine	3½	@	4
Bi-Chromate Potash, Scotch	16	@	17½
Bi-Chromate Potash, American	16	@	17
Bleaching Powders	1½	@	1¾
Caustic Soda, 60 per cent	—	@	4
China Clay, "Star"	13.50	@	14.50
Clay, China, English, per ton	—	@	18.50
Clay, China, Eng., to arrive, per ton	16.00	@	—
Clay, South Carolina, per ton	10.00	@	11.00
Clay, Terra Alba, English, per ton	—	@	22.50
Clay, Terra Alba, American, per ton	10.00	@	15.00
Corn Starch	4	@	4¼
Copperas, American	1	@	1¼
Extract Logwood	9½	@	10½
Potato Starch	5	@	5½
Prussian Blue, dry	32	@	40
Prussiate Potash, American	26	@	28
Orange Mineral	10½	@	12½
Rosins, No. 2, per bbl	2.30	@	2.40
Rosins, good, No. 2, per bbl	2.70	@	—
Rosins, No. 1, per bbl	2.85	@	2.90
Rosins, good, No. 1, per bbl	—	@	3.25
Rosins' pale, per bbl	3.50	@	3.75
Rosins, extra pale, per bbl	—	@	4.00
Sal Soda	1⅝	@	1¾
Soda Ash, caustic	1¾	@	1⅞
Soda Ash, carbonated	1¾	@	1⅞
Soda Ash, refined	1⅝	@	2
Soluble Blue, pure dry	75	@	90
Spanish Brown, dry	90	@	—
Sugar Lead, white	18	@	20
Sugar Lead, brown	9¾	@	10½
Sulphuric Acid, 60 degrees	1¾	@	2
Sulphuric Acid, 66 degrees	2	@	2¼
Talcine Fibre, per ton	20.00	@	25.00
Ultramarine, blue	25	@	27
Venetian Red, American	1¼	@	—
Venetian Red, "Cookson's," Eng	1⅝	@	1¾
Vitriol, blue	7	@	—
Yellow Ochre	1	@	3½

CHICAGO MARKET.

Paper.

Plate	12	@	25
Super-Calendered, white and tinted	10½	@	12
Fine Book, white and tinted	9½	@	10
No. 2 Book	9	@	10
Colored Glazed Mediums	12	@	15
Rag News, No. 1	8	@	8½
Ordinary Rag News	7	@	8
Straw and Wood News	6½	@	7½
Bleached Manilla, No. 1	9	@	10½
Ordinary Manilla	8½	@	9
Bogus Manilla	6	@	7
Straw Wrapping	3	@	3¼
Hardware Wrapping	3¼	@	5
Tissue Manilla, 24 × 36, full count	1.25	@	1.50
Tissue, white, 20 × 30	1.10	@	1.25
Tea Papers, 14 × 20	8	@	9
Tea Papers, 13 × 18	8	@	9
Tea Papers, 12 × 16	8	@	9
Straw Boards, air-dried, ₩ ton	60.00	@	70.00
Straw Boards, steam-dried, ₩ ton	50.00	@	60.00
Wood Pulp Card, middles	—	@	—

Rags and Paper Stock.

Whites, No. 1	4½	@	4¾
Whites, No. 2	3¾	@	3⅞
Blues, No 3	2⅝	@	2¾
Prints	1⅝	@	2
Bagging, No. 1	—	@	3
Mixed Bagging	—	@	3½
Manilla Rope	—	@	3¾
Hemp	—	@	4
Wrapping Stock	—	@	90
Tailor Satinets	—	@	1⅝
Book and Ledger Stock	2¼	@	2⅝
Print Papers	—	@	1¼
No. 1 Manilla	—	@	2
No. 2 "	—	@	1¼
White Shavings	—	@	2½
Mixed Shavings	—	@	3
Common Papers, per ton	18.00	@	20.00
Straw Clippings, per ton	—	@	20.00
New Tailor Seconds	—	@	3½
Black Prints	—	@	1½
Overall Duck	—	@	3
Rag Carpet	—	@	1½
Brussels Carpet	—	@	1½
Flour Sacks	4	@	4¼
White Paper	—	@	3

MILWAUKEE MARKET.

Paper.

Plate	16	@	21
Super-Calendered, white and tinted	11	@	12
Fine Book, white and tinted	—	@	11½
No. 2 Book	9	@	10
Colored Glazed Mediums	—	@	14
Rag News, No. 1	—	@	8½
Ordinary Rag News	—	@	9
Straw and Wood News	6¾	@	7¾
Bleached Manilla, No. 1	9	@	10
Ordinary Manilla	8½	@	9¼
Bogus Manilla	6	@	7
Straw Wrapping	2¾	@	3
Hardware Wrapping	3	@	3½
Tissue Manilla, 24 × 36, full count	1.00	@	1.25
Tissue, white, 20 × 30	1.00	@	1.25
Tea Papers, 14 × 20	7½	@	9
Tea Papers, 13 × 18	7½	@	9
Tea Papers, 12 × 16	7½	@	9
Straw Boards, air-dried, ₩ ton	60.00	@	65 00
Straw Boards, steam-dried, ₩ ton	50.00	@	60.00
Wood Pulp Card, middles	—	@	—

Rags and Paper Stock.

Whites, No. 1	—	@	4¾
Whites, No. 2	—	@	3.90
Thirds and Blues	—	@	2.80
Prints	—	@	2.40
Manilla Rope	—	@	3
Mixed Bagging	—	@	2.35
Wrapping Stock	—	@	.90
Seamed Cloth	—	@	9½
Wool Seams	—	@	3¼
New Clips	—	@	14½
Soft Wools	—	@	.13½
Print Papers	—	@	1.30
Manilla Papers	—	@	2
Common Papers, ₩ 100 lbs.	—	@	.90
Tea Paper	—	@	1.00
White Shavings	—	@	3¼
Mixed Shavings	—	@	2½
No. 1 Book	—	@	3
No. 2 Book	—	@	2¼
Straw Board Clippings, ₩ 100 lbs.	—	@	.90
Skirted Delaines	—	@	3¾

CINCINNATI MARKET.

Paper.

Plate	15	@	20
Super-Calendered, white and tinted	10	@	12
Fine Book, white and tinted	9½	@	10
No. 2 Book	9	@	9½
Colored Glazed Mediums	12	@	13
Bag News, No. 1	7½	@	8
Ordinary Rag News	—	@	—
Straw and Wood News	7	@	7¼
Bleached Manilla, No. 1	9½	@	10
Ordinary Manilla	9	@	9½
Bogus Manilla	7	@	7½
Straw Wrapping	3½	@	4½
Hardware Wrapping	3½	@	4½
Tissue Manilla, 24 × 36, full count	1.10	@	1.25
Tissue, white, 20 × 30	1.00	@	1.10
Tea Papers, 14 × 20	—	@	—
Tea Papers, 13 × 18	—	@	—
Tea Papers, 12 × 16, ₩ bdl., ½ rm	20	@	22
Straw Boards, air-dried, ₩ ton	—	@	—
Straw Boards, steam-dried, ₩ ton	50.00	@	—
Wood Pulp Card, middles	70.00	@	90.00

Rags and Paper Stock.

Whites, No. 1	—	@	4½
Whites, No. 2	—	@	3½
Blues, No. 3	—	@	3
Prints	—	@	2¼
Bagging, No. 1	—	@	2½
Mixed Bagging	—	@	2¾
Manilla Rope	—	@	3
Hemp	—	@	4
Wrapping Stock	—	@	1¾
Tailor Satinets	—	@	1½
Book and Ledger Stock	—	@	2¾
Print Papers	—	@	1½
Over Issue	—	@	2¾
No. 1 Manilla	—	@	2½
No. 2 Manilla	—	@	1½
White Shavings	—	@	3¼
Mixed Shavings	—	@	2¾
Common Papers, ₩ ton	—	@	1
Straw Clippings	—	@	1
New Tailor Seconds	—	@	—
Black Prints	—	@	2
Overall Duck	—	@	3½
Rag Carpet	—	@	1½
Brussels Carpet	—	@	1⅝
Flour Sacks	—	@	4¼
White Paper	—	@	—

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WITH

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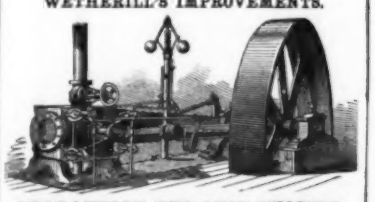

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WOOD CHIPPERS.

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FOR SALE—A ROTARY BOILER, GOOD AS new. Write for information about new and second-hand rotary and steam boilers. Address C., 197 State street, Boston, Mass.

THE WRITER IS MAKING HYDRAULIC AND Screw Presses, and Machines to test the strength of paper or other material.

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18th St., N. of Chestnut St., Philadelphia.

WANTED—A GOOD PAPER FINISHER; MUST be strictly temperate. To such will be given a good situation at good pay. Address B., care Paper Trade Journal.

WANTED—A FIRST-CLASS MILLWRIGHT. One accustomed to Paper Mill work preferred. Address P. O. BOX 2032, New York City.

WANTED—A SITUATION AS FOREMAN BY a reliable man, with a successful experience in making all kinds of Paper. Address H. K. T., office Paper Trade Journal.

WANTED—FROM RELIABLE PARTIES, thorough and accurate estimates for building a paper mill, and all machinery put up in complete running order—manilla—Fourdrinier machinery, 72-inch; details and site given; references required. Address I. S., office Paper Trade Journal.

FOR SALE—ONE CYLINDER MOLD, 80 × 48 inches; good as new. INGALLS & CO., South Manchester, Conn.

WANTED—A COMPETENT MACHINE Tender; also Rag Engineer. Apply by letter, giving references, to JAMES A. TOWNSEND, Highland Paper Mills, Newburgh, N. Y.

FOR SALE—A MAKING CYLINDER MOLD IN good order, 66 inch face, 28 inches diameter. Apply to STANIAR & LOFFEY, 53 Fulton Street, New York.

FOR SALE—ONE STACK OF HARD CALENders, in good condition and all complete excepting weights, consisting of two rolls nine inches in diameter and five rolls five inches in diameter, sixty-two inch face. Address THOS. NIXON, Dayton, O.

FOR SALE—TEN DANDY ROLLS, 62-INCH face, 4 wove and 6 laid.

A BOYDEN TURBINE WATER-WHEEL, 36-inch, with iron case and brass buckets; made by Ames Manufacturing Co., Chicopee, Mass., in the best manner. The wheel is complete, in good order, and will be sold low.

SMITH PAPER CO., LEE, MASS.

PAPER MAKERS WANTED.

One good Machine Tender and one good Pulp Engineer for a Manilla mill, using jute butts, bagging and rope; running a cylinder machine, single or double cylinder. Good wages to capable men. Married men preferred. Address, stating age, experience, and wages asked, J. C. WILSON & CO., 584 Craig street, Montreal. Mills at Lachute, on railway, near Montreal.

PAPER MILLS FOR SALE.

Present product 12 to 15 Tons per week. News and Wrapping. Mills in good running order, and making money.

Twenty-one acres of land; four dwelling-houses; store-room, warehouses, &c.; water-power six months—steam remainder of the year. Coal, two dollars per ton, delivered. Good railroad facilities. Owners having other business requiring their entire attention wish to sell. A bargain for somebody.

Address HILLS PAPER CO., Delaware, Ohio

FOR SALE—CHEAP.

A Fourdrinier Machine, complete from vat to calenders inclusive; will make paper 42 inches wide; is now running, but to be taken down soon.

SMITH, WINCHESTER & CO.,
South Windham, Conn.

FOR SALE.

A Mill Site, situate in Springfield, N. J., for Paper or Paper Boards; 7½ acres of ground, with splendid Pond on premises; also a good Cottage and Barn on property. Address R. J. C., office Paper Trade Journal.

FOR SALE,

FIVE SECOND-HAND RAG ENGINES, of different sizes, carrying from three hundred and fifty to five hundred pounds each; all in good order. Inquire

MEAD PAPER CO., Dayton, O.

TRUSTEE SALE.

On the 7th day of January, 1882, at 12 o'clock, noon, at the mill in North Bridgeport, Conn., will be sold, at Public Auction, all the Real Estate, Buildings, Machinery, &c., recently owned and operated by the Pequonnock Paper Manufacturing Co. Mill is in complete running order; 84-inch Fourdrinier Machine, six 500-lb. Engines, one Jordan Engine, two Steam Engines, water privilege, ponds, &c. Sale will be without reserve, subject to mortgages of $75,000.

(Signed) F. MILLER, Trustee.

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Thirteenth and Buttonwood Sts., Philadelphia,

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Of Every Description,

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STEAM ENGINES FOR PAPER MACHINES

We also make a specialty of the following:

Regrinding Rolls of all kinds by latest improved machine; Screen Plates, Gavit Cone Pulley Cutter (improved); White's Improved Stop Cutter.

Repairing Paper Mill Machinery attended to.

FOR SALE.

CANADIAN PATENT

Adams Improved Satchel-Bottom Flour Sack,

No. 12,033, dated Nov. 27, 1880. A fifteen year patent.

ALSO, CANADIAN PATENT,

Phillips' Flour Sack and Flour Sack Paper,

No. 6240.

Extended for ten years from June 21, 1881.

These valuable patents are offered at a reasonable figure. Canadian manufacturers, desiring special advantages in economy of manufacture and trade marks which they can absolutely control, will do well to improve this opportunity.

ADAMS & CO., Chagrin Falls, Ohio.

EXECUTORS' SALE

—OF—

Valuable Real Estate.

Will be sold at public sale, at the Court-house, in WILLIAMSPORT, PA., on

SATURDAY, JANUARY 14, 1882,

at 10 o'clock A. M., as follows:

FIRST:

ALL THAT BEAUTIFUL AND VALUABLE FARM

(known as the "Governor Shulze Farm,") situated in Montoursville, Lycoming County, Pa., bounded on the north by the State road, on the east by lands of Thomas Epley, Christian Edler, John C. Bryan and others, on the south by the West Branch of the Susquehanna River, and on the west by the Tomb farm and other lands, containing

217 ACRES AND 74 PERCHES.

The improvements are a large TWO-STORY BRICK DWELLING, containing fourteen rooms, with large hall down stairs, and very pleasantly located twenty rods from the road, with a large lawn in front, and desirable as a summer residence. Also one other TWO-STORY FRAME DWELLING, situated at the road; a large stone and frame bank barn, with ample stabling, wagon sheds, corn cribs, and other outbuildings.

SECOND:

A Valuable Grazing or Milk Dairy Farm,

situated in Mosquito Valley, in Armstrong Township, Lycoming County aforesaid; bounded on the north by the public road leading up the valley; on the east by lands of Oliver Watson, Esq.; on the south by lands of Edward Remington and James Hughes, and on the west by lands of John C. Deker, containing about 254 acres. The improvements are a TWO-STORY FRAME HOUSE, with out-kitchen, ice-house, &c.; a large stone bank barn, 75 by 40 feet, with excellent stabling, large sheds, wagon sheds with corn cribs, pig pens, &c.; 150 acres is excellent grain land.

THIRD:

The undivided half of the

"Fairfield Straw Board Mill" Property,

situated in Montoursville aforesaid, consisting of six and a half acres of land, water-power, water-courses, races, dams, &c. The water-power is ample, having the whole of Loyalsock Creek, and is suitable for any manufacturing business requiring water-power. The mill is 100 feet long by 40 wide, three stories high—the first of stone and frame above; steam-house with large tubular boiler, 44 inches diameter, with 48 twelve-feet flues 2½ inches diameter, brick smoke-stack 65 feet high, having good draft; a large straw barn 120 by 40 feet, with a horse stable attached, 40 by 18 feet; two good dwelling-houses and five smaller dwellings, all two stories high. The other half will also be offered at the same time. Titles all perfect. Possession will be given on the first day of April, 1882.

TERMS OF SALE.—TEN PER CENT. of the purchase money to be paid the day of sale; FORTY per cent. more thereof at the giving of possession; the remainder in three equal annual payments, with interest, to be secured by judgment bonds and mortgage on the premises. Deeds will be made on the receipt of the second payment. Further information may be had of the executors at Montoursville.

PEARSON LLOYD,
WILLIAM STARR,
WILLIAM LLOYD,
Executors of Charles Lloyd, deceased.

M. F. WHITON & CO.,

Sole Agents for the

HINGHAM CORDAGE CO.

Manilla and Sisal Paper Twine

OF EVERY DESCRIPTION.

Dealers in

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OF ALL WIDTHS.

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EXETER WOOD PULP CO.,

38 & 40 Hawley St., BOSTON, Mass.,

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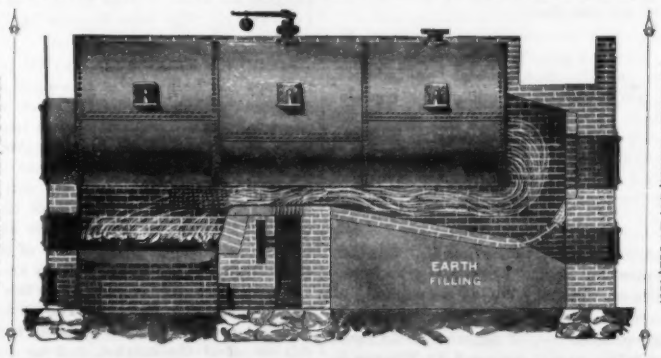

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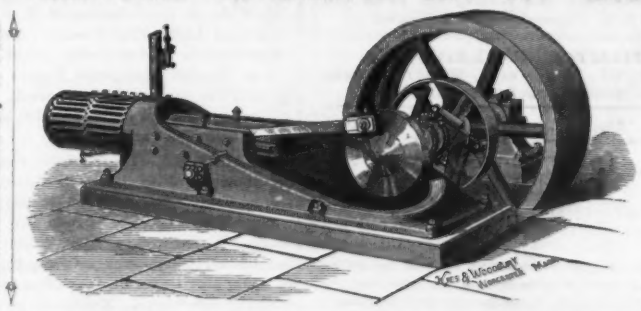

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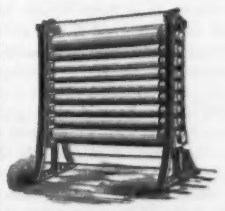

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IMPORTANCE OF SUFFICIENT CURRENT DENSITY.

[Continued.]

The influence on the polarization force of a cell of the size of the plates used as electrodes relatively to the strength of the charging current has also been investigated by several experimenters, among them Crova, Poggendorff and Bunsen, and more recently by Bartoli and Blondlot. It is found that the degree to which a counter electromotive force or polarization force is set up depends very greatly on the quantity of current per unit of surface of the electrodes employed. If the current be weak and the electrodes large, the polarization never reaches its maximum. On the other hand, if the electrodes be of very small surface, and the current a strong one, the polarization may attain abnormally high values. Thus Buff, electrolyzing water with small platinum points, found the counter-electromotive force to be no less than 3.57 volts. This difference between this and the minimum value of about 1.493, must be accounted for by the fact that the state of the liberated products varies with the condition of liberation. With greater "current density"* the gases liberated by decomposing water are no longer simple oxygen and simple hydrogen. With greater current density, a greater proportion of the oxygen comes off in the more highly electro-negative condition of ozone, and more peroxide of hydrogen forms also round the anode, while at the cathode, the hydrogen which is evolved possesses in unusual degree the active properties attributed by chemists to "nascent" hydrogen; that is to say, a larger proportion of it probably is, at the moment of liberation, in some abnormal allotropic condition, bearing the same kind of relation to ordinary hydrogen as ozone bears to oxygen. The allotropic hydrogen is more oxidizable; the ozone more ready to oxidize. Their union would evolve more heat than the union of equal weights of ordinary hydrogen and ordinary oxygen. It requires greater electromotive force to keep them apart; their own tendency to unite is greater. J. Thomsen has even measured the heat value of ozone as compared with oxygen, and it takes its place in our table of elements at the bottom below the peroxides, though chlorine and the haloids would be still lower on the list if they came within the scope of present considerations.

It follows from the above argument, that if we wish to make our storing cells exert their highest possible reaction, we must store them, using a current whose strength (or quantity) is proportioned to the size of the cell. If we use too weak a current, the maximum polarization, and therefore the maximum efficiency, will never be attained. This is one of the rocks on which amateur constructors of storage batteries have come to grief. The current density† is a most important consideration, especially in the early stages of the formation of the cells. It certainly should not be less than 50 milliwebers per square centimetre of surface in the cell.

EFFECT OF STATE OF SURFACE.

Again the state of the surface of the electrodes has much to do in determining the state in which the gases are liberated, and the resulting polarization force. Svanberg, in electrolyzing water with copper electrodes, found the polarization to be .72 volts with smooth plates, and only .47 with corrugated plates. Poggendorff, using platinum plates, found the maximum polarization to be—with bright surfaces, from 2.28 to 2.50 volts; while with surfaces platinized, *i. e.*, coated with a black, powdery deposit of platinum, the polarization in cells, like those of Planté and Faure, where the original surfaces of the plates of lead are coated with thick films of peroxide, or of reduced metal, these considerations do not apply, except for the first operation of charging. Indeed, I have found, experimentally, that there is a gain in scratching the leaden surfaces, before forming the coating of peroxide; the coating is more adherent, and the effective surface somewhat greater; advantages beside which the greater preliminary waste of liberated gases on first charging is comparatively trivial.

We will next take a brief historical glance at the various stages in the invention and perfection of accumulators or storage batteries.

HISTORICAL SUMMARY.

Within one year after the discovery of the pile by Volta, two very important observations had been made. Nicholson and Carlisle, in 1800, discovered that the current so produced could decompose water;‡ and in 1801, Gautherot discovered that the wires of platinum or of silver which had been employed to thus decompose salt water, acquired and retained, after being detached from the pile, the power of yielding a transient current, as could be proved by their efficacy in causing muscular contractions in a frog's leg, and in yielding the so-called galvanic taste. This is the phenomenon afterward denominated "the polarization of the electrodes." It was found to consist in a peculiar state of the electrodes, which manifested its presence, even before the exciting current of the pile was cut off, by producing an enfeebling reaction against that current, the polarization current being in a direction which opposed the exciting current. The phenomenon is well known to all electricians, and occurs not only in electrolytic cells, but in the cells of the voltaic batteries, where the liberation of hydrogen bubbles is accompanied by an opposing reaction of the same kind. Indeed, the difficulty with batteries has been to get rid of the polarization.

In 1803, Ritter, of Jena, re-observed the same phenomenon, using wires of gold; and perceiving the importance of this reaction, he constructed a secondary pile which we will presently describe.

The phenomena of the secondary currents due to polarization were further investigated by Volta, Marianini, Davy, Grotthuss, De la Rive, Sinsteden, Becquerel, Schönbein, Matteucci, Grove, Faraday, Buff, Beetz, and others. Matteucci and Grove in particular studied the reaction currents set up by the presence of uncombined gases at the electrodes, and the latter constructed a well known "gas battery." In 1860, M. Gaston Planté brought out a secondary battery constructed of lead-plates dipping into sulphuric acid, and in a remarkable and valuable series of classical researches, he investigated the phenomena of their action. More recently, modifications of the Planté accumulator have been suggested by M. Camille Faure and M. A. de Méritens. These various systems will be described in detail presently. Professors E. J. Houston and Elihu Thomson, of Philadelphia, have made the suggestion which embodies the principle of reversibility in the case of the Daniell's cell. They place two horizontal copper plates in a cell containing sulphate of zinc in strong solution. To change this cell, a current is sent through it from the top plate downward. The upper plate anode dissolves, forming a solution of sulphate of copper, which, being specifically lighter, floats on the sulphate of zinc. On the lower plate, metallic zinc is deposited; so that, when discharged, this battery is merely a "gravitation Daniell" battery. It will afterward yield a current so long as there remains any zinc in the metallic state, or so long as there exists a chemical difference between the two electrodes. This suggestion has been modified by M. d'Arsonval, who uses an electrode of lead, or of carbon covered with leaden shot along with an electrode of zinc in sulphate of zinc. In this case, when the cell is charged, zinc is deposited upon the zinc plate, while the lead becomes peroxidized.

Other suggestions have come still more recently from M. J. Rousse, who proposes the use of ferro-manganese, and of palladium as electrodes. The advantages offered by the former alloy over zinc do not appear to be great; and the cost of the latter metal is so enormous as to render suggestion valueless for practical ends.

RITTER'S SECONDARY PILE.

Ritter discovered the possibility of secondary voltaic action while studying the chemical action of electric currents upon liquids. He employed a large voltaic pile as his source of electricity, and observed, not only the decomposition of water into oxygen and hydrogen, but the phenomena of formation of peroxides, and of the deposition of metallic films at the anode and cathode respectively, when metallic solutions were employed. He found that his gold wires, after becoming covered respectively with films of separated oxygen and hydrogen could set up violent contractions in a frog's leg. He further investigated the phenomenon with different kinds of wires, and found platinum to yield the best result, gold coming next in order, then silver, copper and bismuth. With lead, zinc and tin, however, he obtained no result. He further showed that even after having been removed from the water and dried, the pair of gold wires retained their activity, and when afterward plunged into water yielded a current in a direction opposed to that of the pile, by which they were originally rendered active.

One remarkable experiment of Ritter's found its way into English journals. Ritter took a *louis d'or*, and placing moistened cloth against its two sides, proceeded to pass through this combination a current from a powerful pile. The coin still laid in its wrappings was afterward found capable of furnishing a current. This led Ritter to propound the view that conductors of electricity, such as the metals, could be charged with electricity; the coin between its metal wrappings being, according to him, the analagon of the Leyden jar lying between its two coatings of tinfoil. He mentions also mercury, carbon, graphite, and binoxide of manganese, as being capable of receiving galvanic charges. "Each of these bodies," he says, "becomes charged upon both its sides, just like the glass of the Leyden jar, and this state of charge, when it exists in such concentration or intensity as in the foregoing bodies, is perceived as a state of oxygenation on one side and a state of hydrogenization on the other." He also draws attention to the curious behavior of quicksilver, which, when placed between water and water, and included in the circuit of a voltaic pile, shows movements due to changes in surface-tension where the films of gas are produced. Ritter advanced to the rather unwarranted conclusion that, since in these cases the charge stored up depended on the presence of oxygen and hydrogen films produced from the water, there must necessarily be water in all bodies, and that chemical separation always accompanied electric charge.

To produce these effects of galvanic charge upon a larger scale, Ritter constructed a secondary pile (*Ladungs-Saüle*), consisting of a series of discs, of one metal—copper—separated by pads of cloth, moistened with a solution of salt or sal ammoniac. When charged from a voltaic pile of ordinary construction, this secondary pile received a charge, which afterward enabled it to give a shock to a person touching its two ends with his hands. It would also decompose water, and, in short, reproduce all the effects of the primary pile, but reversed as to the direction of the currents it furnished.

Ritter was not happy, however, in all his efforts to explain what he observed. He founded his arguments on the incorrect supposition that oxygen consisted of water combined with negative electricity. It was some years before the researches of Volta, Marianini, and Schönbein placed the phenomena on their true basis; Schönbein adding the very valuable observation that the presence of ozone in the liberated oxygen intensified the secondary electric action.

PROGRESS IN ELECTRO-CHEMICAL KNOWLEDGE.

The researches of Davy, De la Rive, and of Faraday, upon the chemical phenomena of the voltaic cell, showed that the chemical decompositions within the battery were amenable to the same laws as those which took place in an electrolytic cell at a distant point of the circuit. Faraday brought out several most valuable points in his "Experimental Researches." He describes (Art. 750) how, in electrolyzing acetate of lead, "in place of oxygen, or even the gases already described, peroxide of lead now appears at the positive,* and lead itself at the negative pole." In his argument for the chemical theory of the cell, he remarks that while those substances are highly electro-negative which cannot be oxydized, there is another class of substances still more highly electro-negative, namely, those substances which readily give up oxygen, the peroxide of manganese being more negative than platinum, as Volta showed, and the peroxide of lead being still more negative than that of manganese, as Munck af Rosenchöld had shown. Faraday remarked (Art. 1822) on the good conducting power of the peroxide of lead. He also observed that red lead is more negative than platinum. De la Rive indeed utilized the strong electro-negative property of peroxide of lead in the construction of a cell in which this substance, packed in a porous pot around a platinum strip, served as one pole, zinc being the other. Niaudet, in his treatise on the "Pile Electrique" (published 1878), suggests that red lead (minium) would have answered equally well. In the Bakerian lecture for 1843, Wheatstone announced that he had measured the electromotive force of peroxide of lead against zinc, and had found it to be 2.266 of that of a Daniell's cell (= 2.448 volts.)

(To be Continued.)

* This term means "the amount of current per unit of surface of the electrodes," and is calculated for either electrode (in the simple case of parallel plates), by dividing the total strength of the current in webers (*ampères*) by the area of that electrode in square centimetres.

† Crova, and more recently Bartoli, have given exact formulæ, by which to express this important relation. Let P represent the E.M.F. of polarization at any time: it can be expressed as a function of the possible maximum polarization and of the density of the current. Let A be this possible maximum E.M.F.; s = the surface (supposed uniform), q the quantity of electricity conveyed in the time t (supposed short), then

$$P = A\left(1 - 10^{-a\frac{q}{s}}\right)$$

where a is a constant (8,400 circ.) This may be interpreted as follows:—The polarization falls short of its possible maximum by an amount the logarithm of which is inversely proportional to the current density.

‡ Water had previously been decomposed by discharges from an electric machine in 1789, by Paetz van Troostwyk and John Cuthbertson.

* Professor Adams, commenting on this observation of Faraday's, shows that Faraday thus anticipated Planté in the discovery of the leaden cell. But a Planté cell filled with acetate of lead is almost useless. The fact that peroxides are thus deposited on the anode was thus discovered before Faraday's researches by Nobili, who noticed also the beautiful irridescent colors in the rings of peroxide films deposited on an anode plate opposite a printed cathrode; the phenomenon known usually as *Nobili's rings*.

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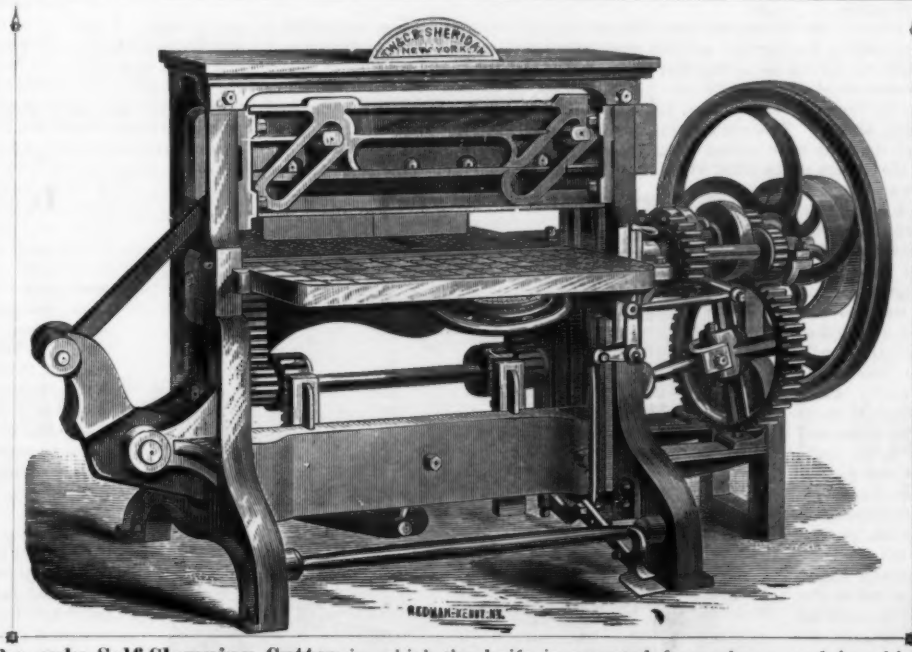

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24	"	"	3	"	"
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It is probable that no single thing in connection with the use of the return tubular boiler, as ordinarily set with flush front, is more troublesome or causes greater loss than the usual means employed to shut off the connection between the fire-box and the uptake or flue at the front end of the boiler. Anything employed for this purpose should effectually prevent the direct passage of the products of combustion from the fire-box to the uptake, since it is evident that all heat passing off in this way is practically lost, so far as any useful effect in generating steam is concerned, and not only this, but the heat thus passing off, when considerable in quantity, and, as is usual, of a high temperature, may, by coming in contact with parts of the boiler above the water line, result in material injury to some of these parts.

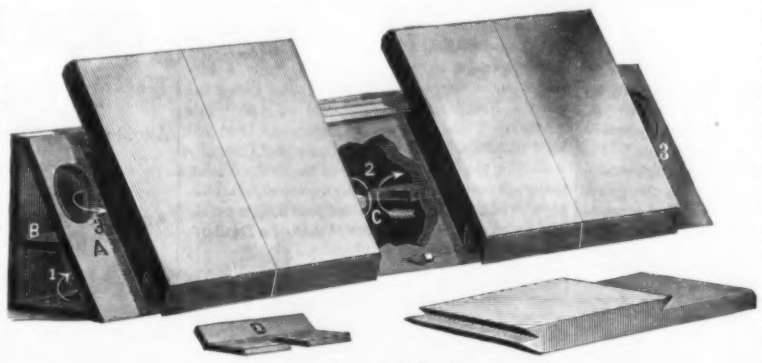

FIG. 1.—ARCH PLATE.

But this, although a serious defect, is not the only one incident to the prevailing type of boiler setting. An examination of a number of flush front boilers in use for any considerable time will, probably, in nineteen out of twenty instances, show that the cast-iron front is warped and twisted out of all respectable proportions, and, in the majority of instances, is badly cracked and broken. This results not only from the fact that any brick setting over the fire door and the corners at the sides, which serves to protect the front as well as to act as a shut-off between the fire-box and uptake, will not, under the intense heat to which it is exposed, maintain its integrity for any length of time, but also that these brick, notwithstanding their poor conductility, will, when subject to intense and constant heat, finally themselves heat the front to an injurious extent, while iron used as a shield, either as an entire mouthpiece or as side guards, is so quickly destroyed as to hardly be worth consideration.

It follows that the gradual displacement of the fire-brick setting, which usually begins with the first fire put in the furnace, and continues until the arch gives away entirely, necessitating stopping and cooling down the boiler and setting, and building it up again, causes a constant loss of heat that passes to the flue in this way, as being more direct than the proper course; hence the loss is a compound one, consisting directly of the heat thus escaping, and, incidentally, in the damage done by this heat to the front and other exposed parts.

We present, with this, engravings of a new design in boiler setting, the object of which is to prevent the escape of heat in the way referred to, and the damage incident to such escape, as well as the damaging effect of highly-heated masses in contact with the boiler front, and at the same time bring about an actual economy in the consumption of fuel. Of these Fig. 1 is a perspective view of an arch plate, which in its use supersedes the ordinary brick arch over the fire doors of the furnace. This plate, which is hollow, is of cast-iron, the face being lined with iron stone, secured in a manner clearly set forth by the engraving.

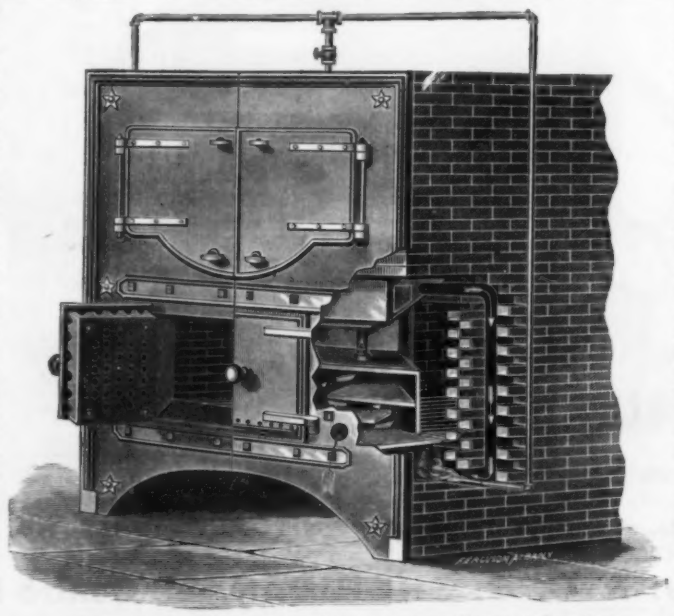

FIG. 2.—BOILER SETTING WITH AIR DELIVERED UNDER GRATE BAR.

Fig. 2 represents the arch plate in position, and also the jamb plates, and clearly shows the manner in which they are used in connection with an ordinary boiler front and brick setting. It will be seen that the arch plate, as stated, takes the place of the usual fire-brick arch, while at the sides of the door the hollow cast-iron jamb plates are substituted, in like manner, for the brick work or other shields.

Of course, if these plates were not in turn protected from the heat of the furnace, they would be quickly destroyed; and for this purpose they are cast hollow, and a constant circulation of air through them prevents their being heated sufficiently to injure them. For the purpose of utilizing the hot air, after it has passed three times through the side plates and twice through the arch plates, it passes through a flue in the brick work and down under the grates. To insure a positive circulation at all times through these plates, a small steam jet is connected with this flue, which may be used when the damper is closed, or at other times if found, as is frequently the case, that a small jet under the grate is advantageous. The course of the air through these plates and flues is plainly pointed out by the direction of the arrows.

Fig. 3 illustrates the construction and arrangement of the parts when it is thought advisable to use the air, previously heated at the front, at the bridge wall, as is frequently done, it is claimed, with good economy in the use of ordinary fuel, and which is of undoubted advantage in the use of some kinds of fuel. It will be seen that instead of passing the air down and under the grate, as previously described, it is conducted directly back to the bridge wall, which is made hollow for the purpose, and provided with suitable perforations through which it passes, and is brought in contact with the over-passing unconsumed gases, bringing about their combustion, and resulting in saving heat that would otherwise be wasted.

It will be seen that the improvements consist chiefly in the addition of the appliances described to the ordinary boiler setting; these appliances, it is claimed, lasting as long as the boiler itself, with the exception of the iron stone lining, which it is conceded may require to be renewed after a time, although a year of constant use has in no way affected them. When, however, any repairs are necessary, it will be seen that the plates being entirely independent of the fire walls, it is the work of but a few minutes.

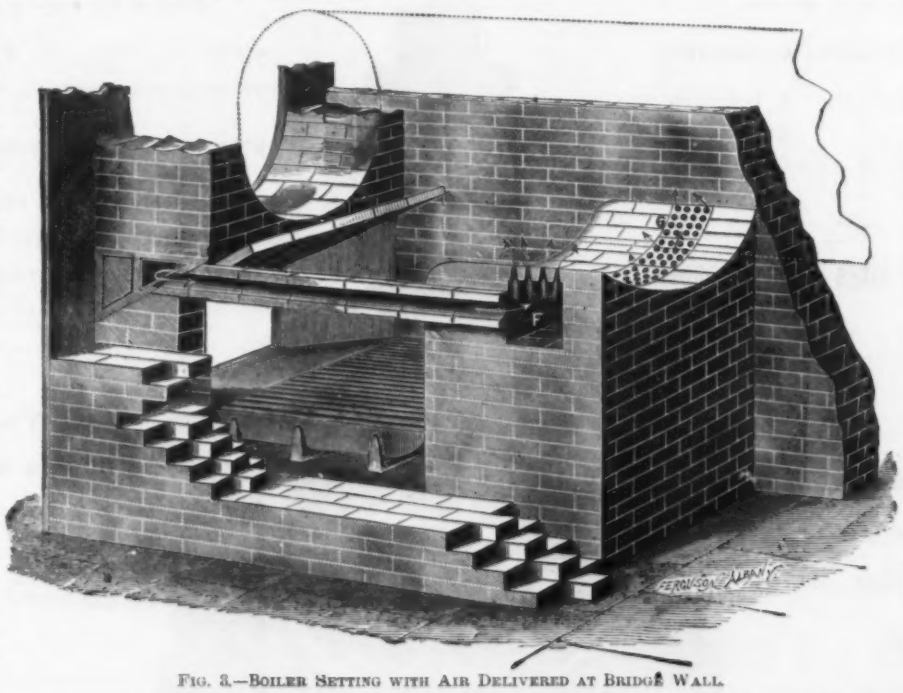

FIG. 3.—BOILER SETTING WITH AIR DELIVERED AT BRIDGE WALL.

These fire-jamb plates, and all appliances necessary for setting boilers on this plan, are made by the Cohoes Iron Foundry and Machine Company, Cohoes, N. Y.

One of the paper manufacturing firms at Turner's Falls, Mass., has bought a large tract of land in Jamaica, Vt., on which there is a hillside covered with poplar, which is to be cut off and shipped to Brattleboro, and thence to the paper mill to be made into pulp.

The paper mill at Topsham, Me., turns out every twenty-four hours six tons of paper, yet cannot fill orders as fast as received. A wooden box factory has been erected in the village.

Putting Up Line Shafts—Setting Engines and Tools.

BY H. REYNOLDS.

How to put up a line shaft with the least labor, and so as to know that it is all right when done, is a question that bothers a good many machinists. In putting up line shafting, in many cases the trouble is in not making haste more slowly. For if the shaft is not put up true, of what avail is the speed with which the job is done?

I have adopted a plan that suits me well and gives good results, and I offer it for the consideration of others. If, for instance, I am to put all the shafting, together with engine, &c., I commence by making a ground-plan, showing the location of the tools to be run, and study so to place them, that the work may progress from one to another, or from the beginning to the conclusion, with as little handling as possible. Then, knowing the speed that the tools should run, I note what size pulleys are wanted on the line, and on what section they are wanted. I then take the longest shaft and lay out where I wish to place hangers, and I am then ready for business. If there are to be any extra timbers put in, I show the carpenter just where they are wanted, and proceed to locate permanent points, from which all measurements are taken, by measuring from one of the corners to whatever distance the line is to be from the side of the room, and driving a copper or brass nail and marking with prick punch, to show the exact centre—and the same at the opposite end of the room. Then from one point to the other snap a fine chalk-line, being careful to have it thumbed at frequent intervals, if the line is long, so that it may show only one mark. I then drop a plumb-line from the ceiling to the centre marks on the witness nails, and snap a line across the timbers, taking the same care as on the floor. I then have as many wooden blocks—three or four inches longer than the box, three or four inches wide, and one inch thick—as there are hangers, and tack them on the floor, over the chalk line, and under where the hangers are to be located, and level them very carefully, taking pains to change ends with the level and staff, so as to neutralize any error there may be in the staff or level. I then cut a measure to go from one of the blocks to timber above, on which the feet of the hanger rests, and from each of the blocks lay off on these timbers, how much is to be taken off or added to, to make all of the seats for hangers level. Then from the chalk line already made, measure either way and mark for the bolt holes.

Now, while the carpenter is doing his work, I measure on each block, from centre mark for hangers, half the length of the box either way, and make a mark across the block, and on that mark I lay off half the diameter of the shaft and make a cross mark or dot, to line the shaft by.

Everything is now ready to bolt up the hangers, put the pulleys on the shaft, as required by the ground plan, and hoist the shaft into place, and proceed to level and straighten, which I do as follows:

To level, I make a tram, by taking a pole and driving a piece of wire or a nail in the end, and filing it off until it will just pass under the shaft when the end is resting on one of the blocks, and by placing one end on the mark showing the length of box and the wired end against the shaft close by the box, I know that it is plumb, and have only to raise or lower the shaft by means of the adjusting screws, until the pole will just pass under.

To straighten the shaft, I drop the plumb-line over the shaft close to the hanger, and, if straight, the point of the plumb will be just at the mark laid off on the block, as described before, this being done at each of the hangers, and the job, so far as the line shaft is concerned, is completed.

Now, to locate the counter-shaft, I measure from the witness nails driven in the floor, as far as it is to be from the main shaft, and snap a line as before described, and proceed in every way as on the main line. If desirable to set the tools as the work goes along, I do it all by the floor lines. For instance, to set a lathe, move the tail centre to the farther end of the ways, and drop a line from the centre to the floor; then move the lathe until the plumb point is the same distance from the floor line at both centres. For an iron planer, lay a straight edge across the bed and against the uprights, and drop lines from that, and so on with all of the tools.

To set the engine, go back to the witness nails, and measure distance to the centre of engine-shaft; or, if not convenient to measure from the nails, measure from any convenient point on the floor line between those nails, and locate the ground line, from which to lay out the engine foundation in the usual way.

If there is to be shafting on the floor above, bore a small hole as near over the witness nails as possible, through which drop a plumb, and measure from the point to the nail, and then from the line above the floor measure off the same distance and drive witness nails for that floor, and so on from floor to floor, repeating the operation as described on the first floor.

Experts may criticise my way of doing the job, but they are not the ones I am talking to, but to the men who have never had occasion to put up a line shaft. The problem is, how to put up a line shaft with the least labor, and know that it is all right when done.—*American Machinist.*

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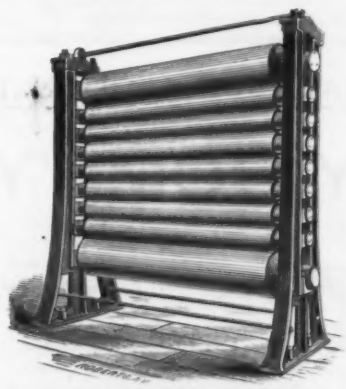

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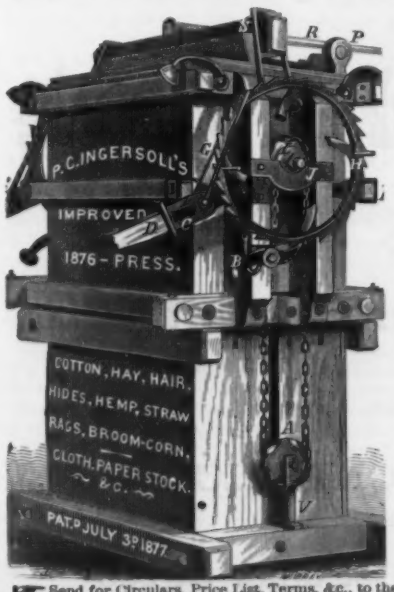

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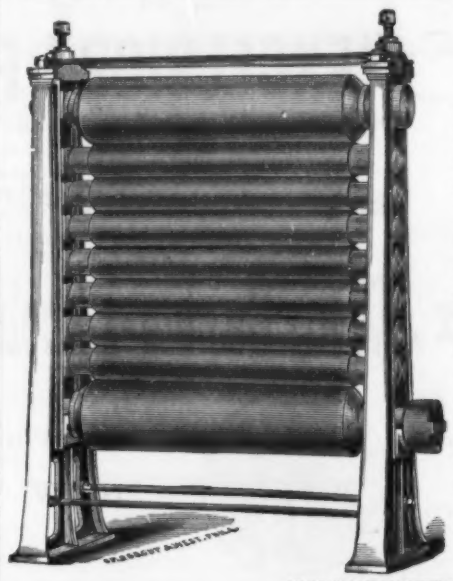

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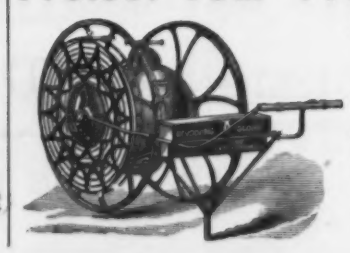

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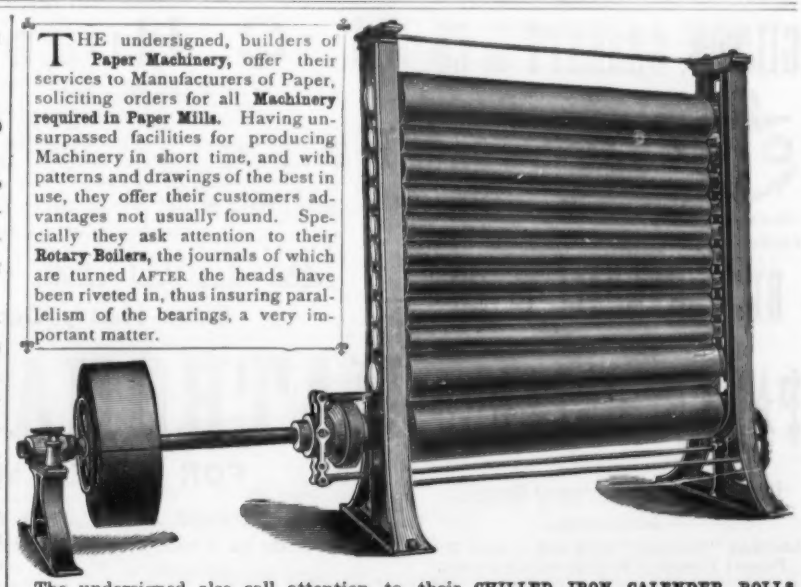

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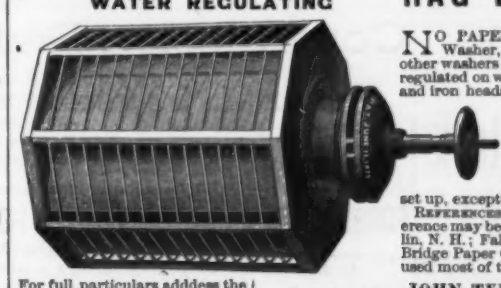

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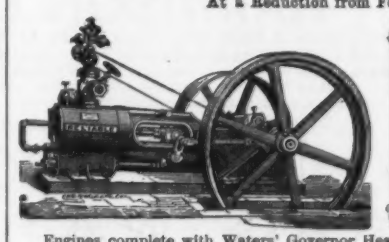

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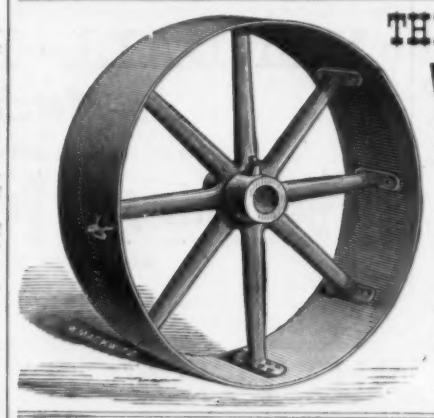

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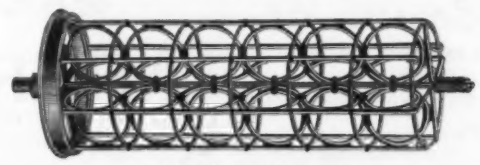

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